# Service Manual

PIONEER®
*The Art of Entertainment*

ORDER NO.
**CRT2145**

MECHANISM ASSY
# CASSETTE MECHANISM

**NOTE:**

- **This service manual describes the operation of the cassette mechanism incorporated in the models listed below.**
- **When performing repairs, use this manual together with the specific manual for the model under repair.**

| Model | Service Manual | Mechanism Assy |
|---|---|---|
| KEH-1700/X1M/UC<br>KEH-1750/X1M/ES | CRT2134 | CZX3049 |
| KEH-1700/X1M/EW<br>KEH-1730/X1M/EW | CRT2133 | CZX3050 |
| KEH-1010QR/X1M/EE<br>KEH-1050QR/X1M/ES<br>KEH-1050QRS/X1M/ES | CRT2122 | CZX2994 |
| KEH-1030/X1M/ES<br>KEH-1030SW/X1M/ES | CRT2123 | |

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## 4.3 AUTO REPLAY OPERATION

(1) When the rotation of the Reel Spindle Assy (D) ⑮ stops, the detection mechanism operates. (For the operation of the detection mechanism, refer to 4.1 OPERATION OF THE DETECTION MECHANISM.)

(2) After detection, the system operates in reverse. The FR Changing Arm Assy ④ moves and the linked Adjuster Link (X) ㊻ taps the Lock Arm (A) ㉗ to unlock the FF and REW Levers (AT) (㉚ and ㉛).

(3) The FF and REW Levers (AT) (㉚ and ㉛) return to the given position by the pressure of the FF/REW Lever Spring ㊹. Then the Head Plate Assy (S) ② is pushed out by the pressure of the Head Plate Spring ㊾.

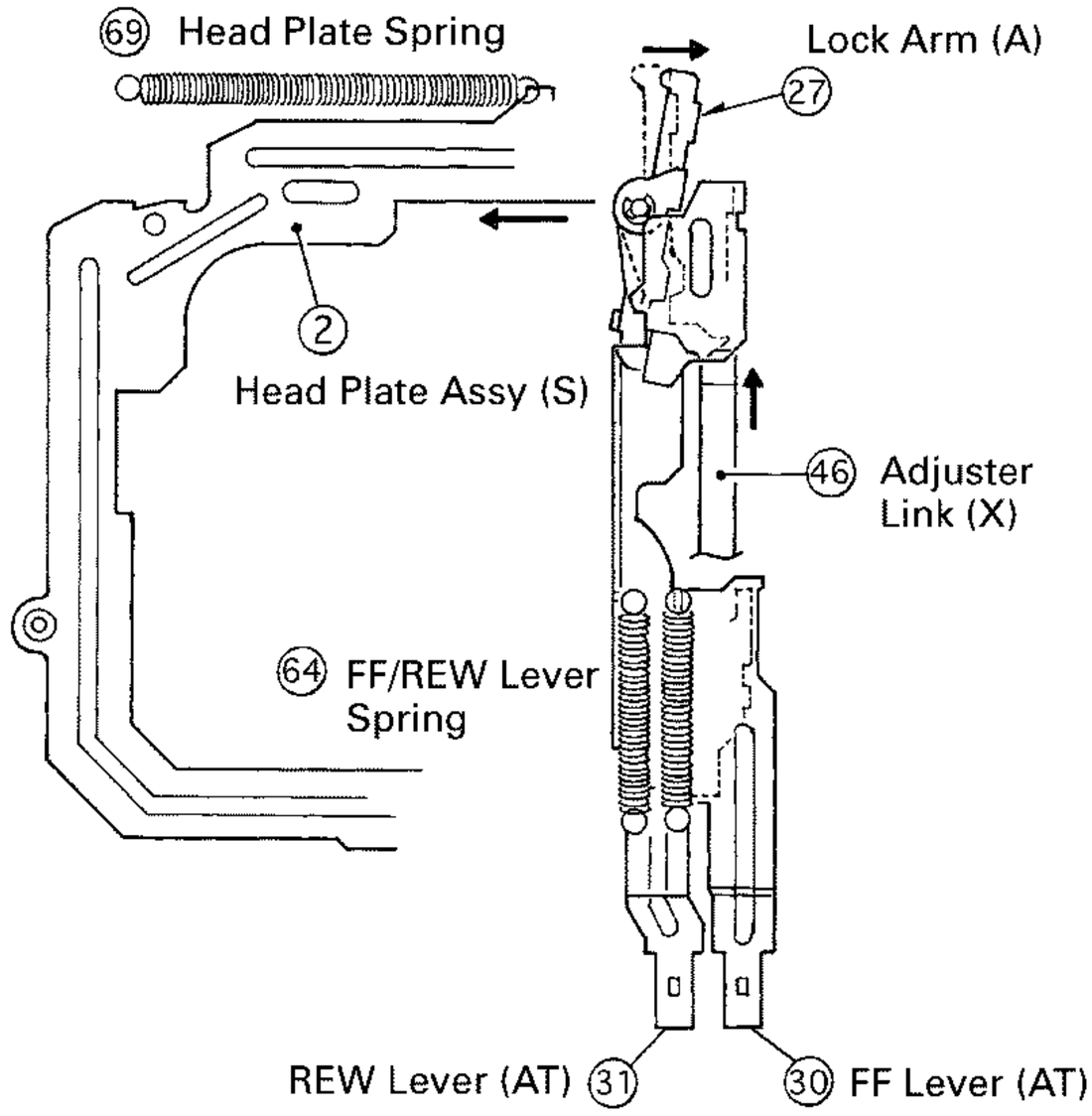



Fig. 7

## 4.4 CASSETTE INSERTION AND LOADING OPERATION

(1) Inserting a cassette rotates the Center Plate Spring (B) ㊽ in the reverse direction to activate pressure in the withdrawal direction.

(2) The Tape Hooker ㊷ withdraws the cassette by the pressure of the Spring.

(3) The Tape Hooker ㊷ taps the Eject Cam Lock Assy ⑥ to unlock the Eject Cam ⑳. Then the Eject Cam ⑳ moves in the direction shown by an arrow in the Fig.8.

(4) The Eject Cam ⑳ lowers the Cassette Hanger (X) ㉒, and the Head Plate Assy (S) ② moves forward.

(5) The tooth of the Cassette Hanger (X) ㉒ shifts the Power Switch(SW1) ㊾ to ON.

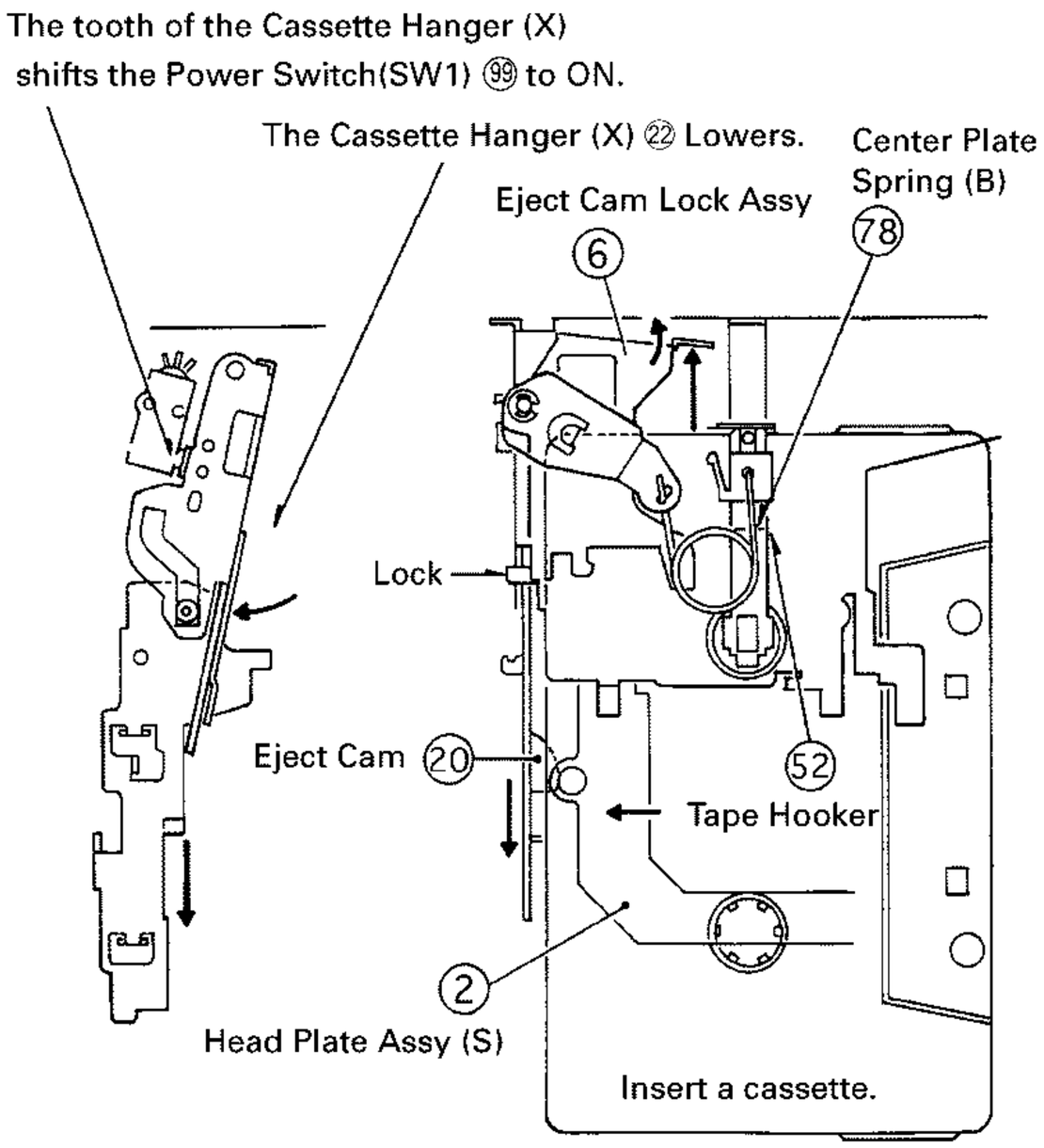



Fig. 8

## 4.5 MUTE MECHANISM

(1) Pressing the FF Lever (AT) ㉚ or REW Lever (AT) ㉛ (FF/REW operation) retracts the Head Plate Assy (S) ②.

(2) When the Head Plate Assy (S) ② retracts, the Mute Arm (N) ㊶ presses the Mute Switch(SW2) ㉒ to shift it to ON.

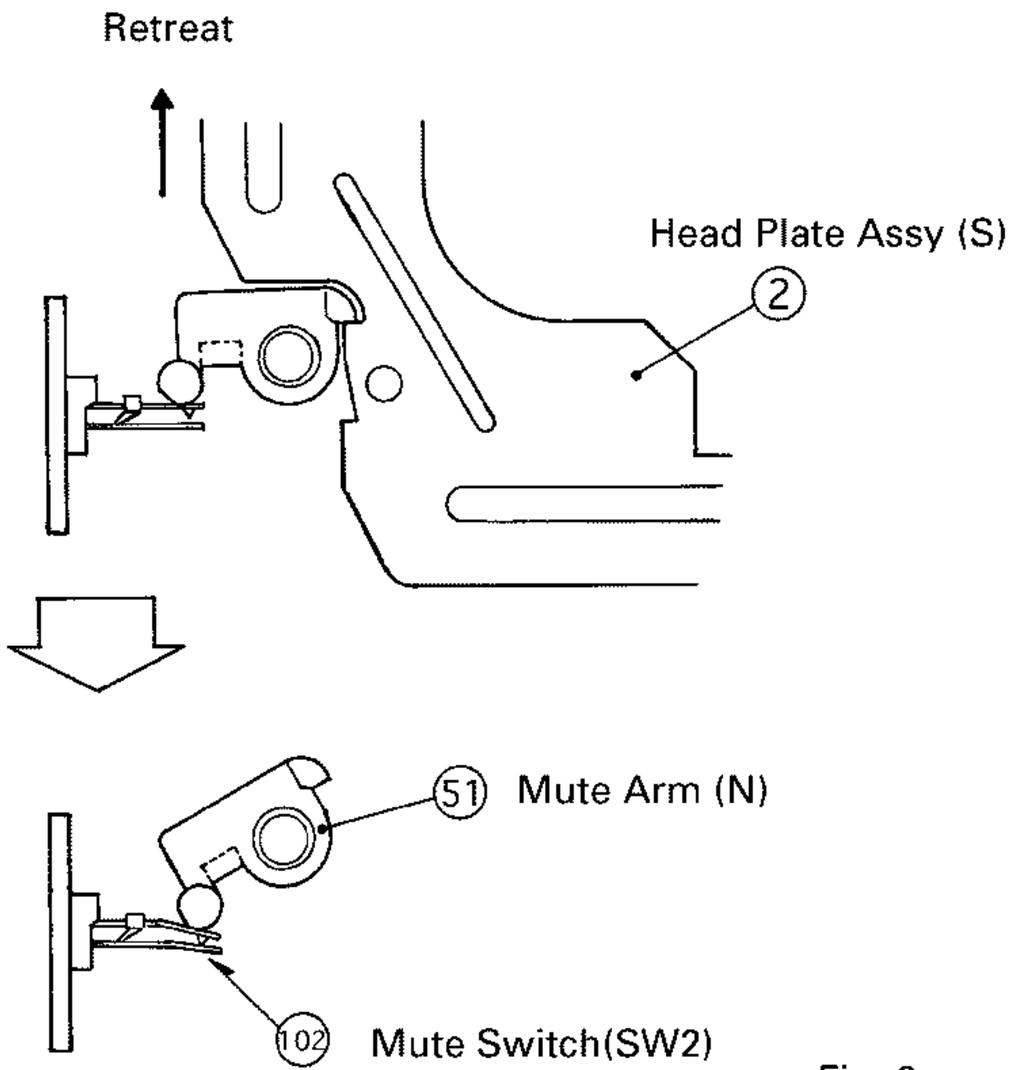



Fig. 9

## 4.6 FF OPERATION (IN THE FWD DIRECTION)

(1) When the FF Lever (AT) ㉚ is pressed, it locks with the Lock Arm (A) ㉗.

(2) The tilted portion of the FF Lever (AT) ㉚ retracts the Head Plate Assy (S) ②. When the Head Plate Assy (S) ② moves backward, the Pinch Arm (F) Assy (PS) ⑭ moves away from the Flywheel Assy (BF) ⑫.

(3) Then, the Reel Spindle Assy (D) ⑮ rewinds the tape (with the clutch mechanism inactivated).

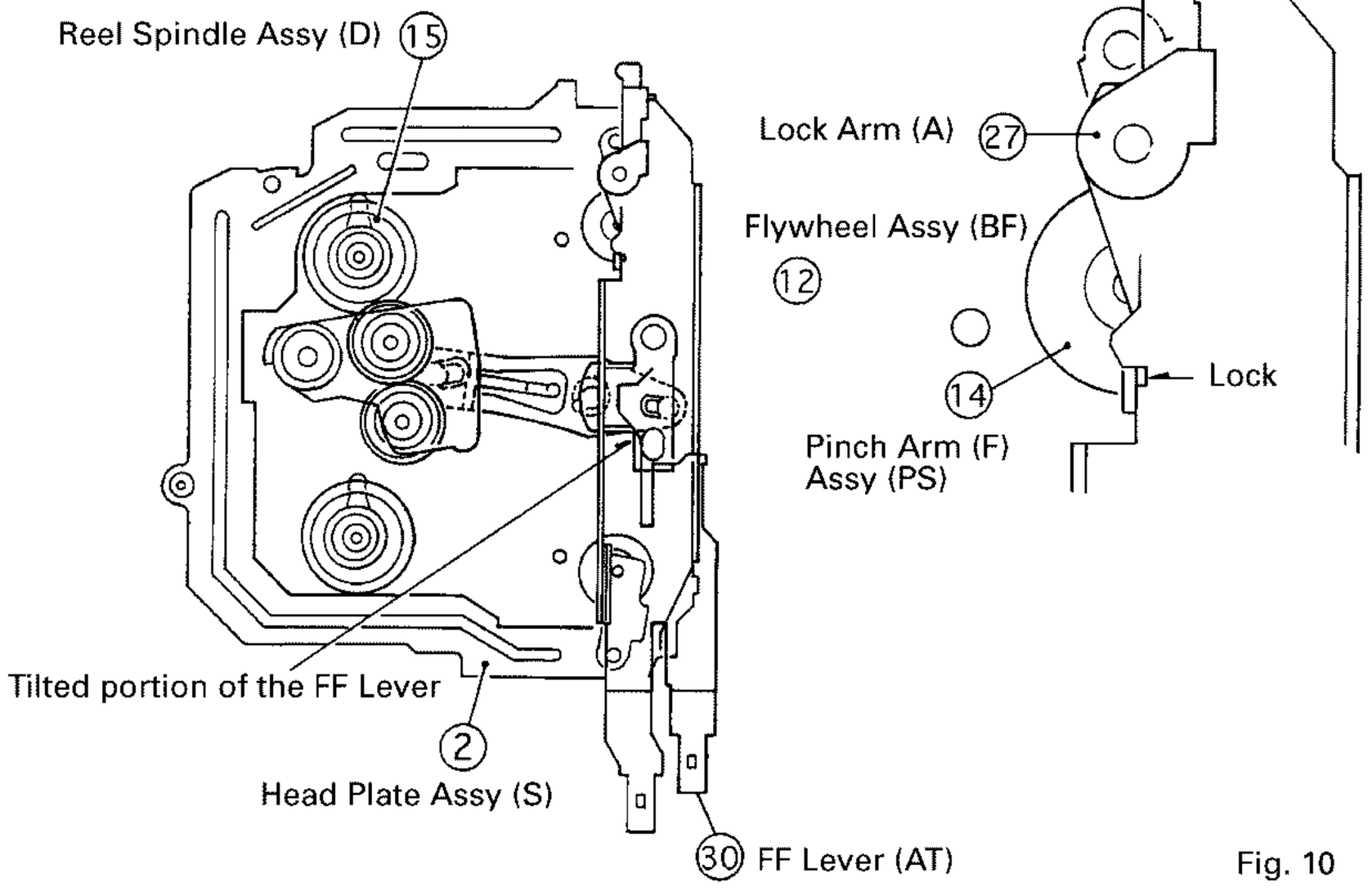



Fig. 10

## 4.7 REW OPERATION (IN THE FWD DIRECTION)

(1) When the REW Lever (AT) ㉛ is pressed, it locks with the Lock Arm (A) ㉗.

(2) The tilted portion of the REW Lever (AT) ㉛ retracts the Head Plate Assy (S) ②. When the Head Plate Assy (S) ② moves backward, the Pinch Arm (F) Assy (PS) ⑭ moves away from the Flywheel Assy (BF) ⑫.

(3) The tooth of the REW Lever (AT) ㉛ presses the Change Lever (B) ㉘. The Change Lever (B) ㉘ links to the FR Arm (B) ㉙, FF Arm ㊷, and then TU Gear Arm Assy ㊾.

(4) The TU Gear Arm Assy ㊾ moves toward the opposite side of the Reel Spindle Assy (D) ⑮ for the playback and engages with the other Reel Spindle Assy (D) ⑮ to rewind the tape.

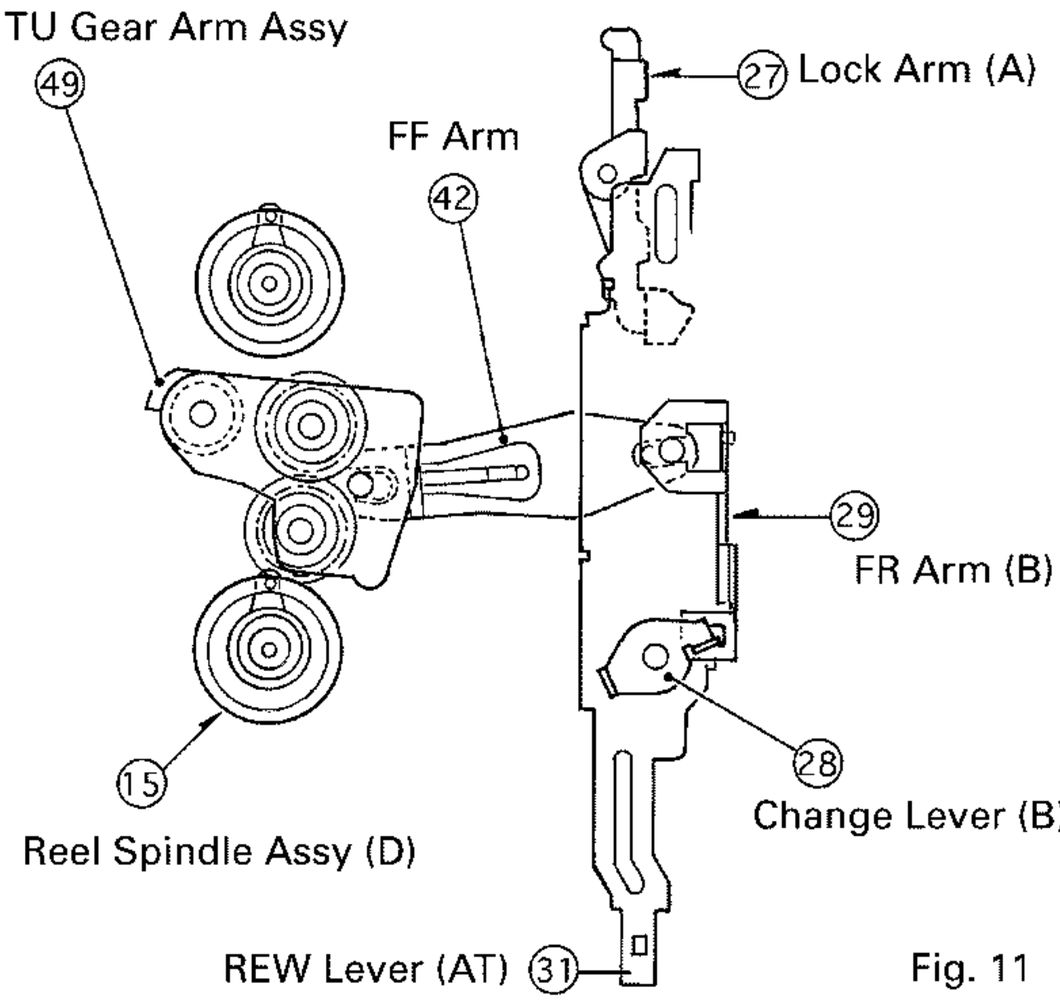



Fig. 11

## 4.8 AMS OPERATION

(1) The FF and REW Levers (AT) (㉚ and ㉛) are locked by the Lock Arm (A) ㉗.

(2) The Release Arm ㉜ is pulled by the Plunger(SO1) ㉞.

(3) The Release Arm ㉜ strikes the Lock Arm (A) ㉗ to unlock it.

(4) The FF and REW Levers (AT) (㉚ and ㉛) are returned by the pressure of the FF/REW Lever Spring ㊹, the Head Plate Assy (S) ② is pushed out, and the system plays back.

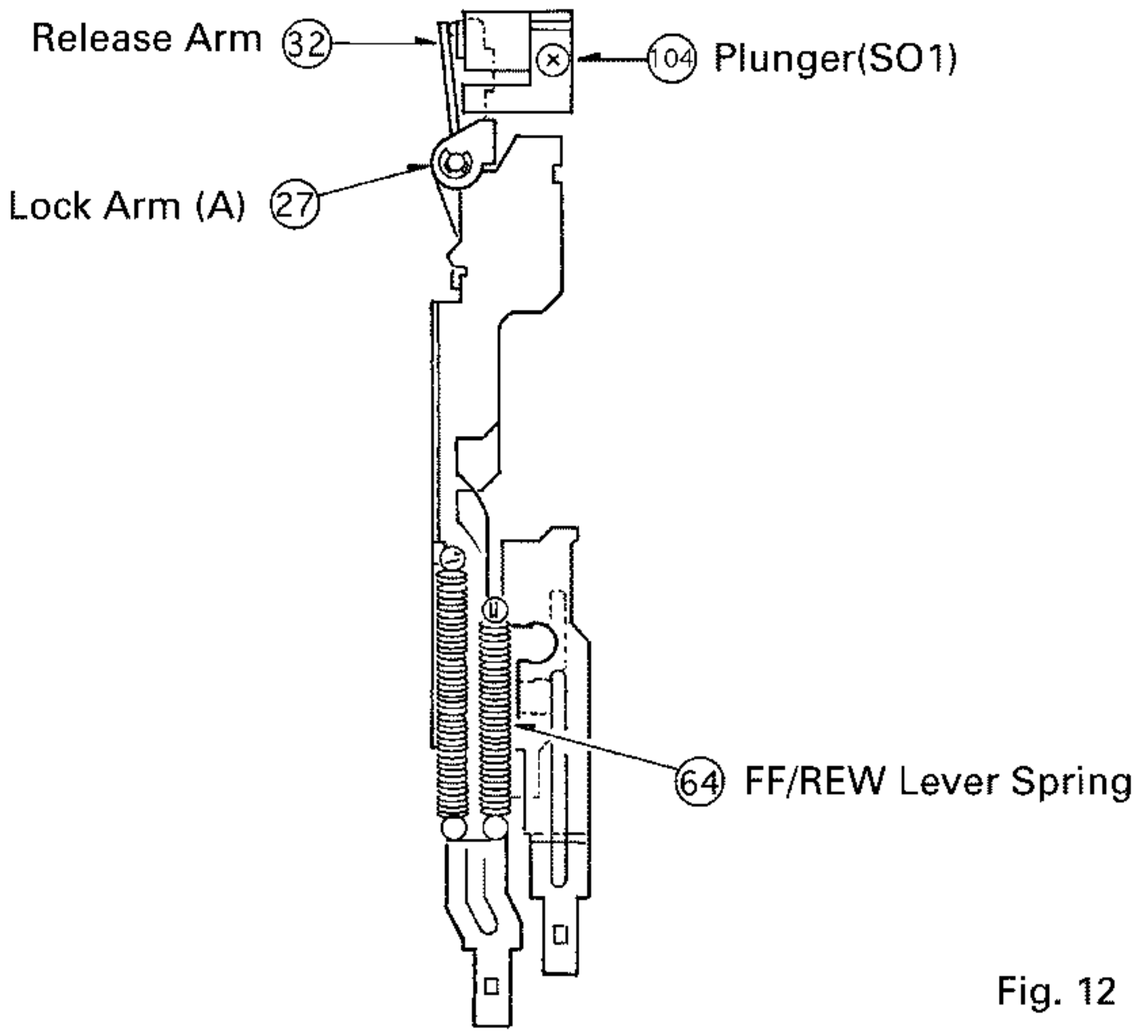



Fig. 12

## 4.9 EJ OPERATION (CASSETTE EJECTION)

(1) Press the Eject Lever ㉑. The Eject Lever ㉑ pushes the Eject Cam ⑳. The cam (tilted portion) of the Eject Cam ⑳ retracts the Head Plate Assy (S) ②.

(2) Then, the Head Plate Assy (S) ② pushes the Pinch Arm (F) Assy (PS) and (R) Assy (PS) (⑭ and ⑬) to retract them.

(3) The Cassette Hanger (X) ㉒ is lifted by the projected portion of the Eject Cam ⑳. The lifted Cassette Hanger (X) ㉒ shifts the Power Switch(SW1) ㊾ to OFF. At the same time, the Return Link ㊽ pushes the Center Plate ㉖ to rotate the Center Plate Spring (B) ㊽ in the reverse direction.

(4) The pressure of the Center Plate Spring (B) ㊽ causes the Tape Hooker ㊷ to move toward the ejection direction. The Tape Hooker ㊷ moves the Eject Cam Lock Assy ⑥ to lock the Eject Cam ⑳.

(5) The cassette is ejected by the Tape Hooker ㊷.

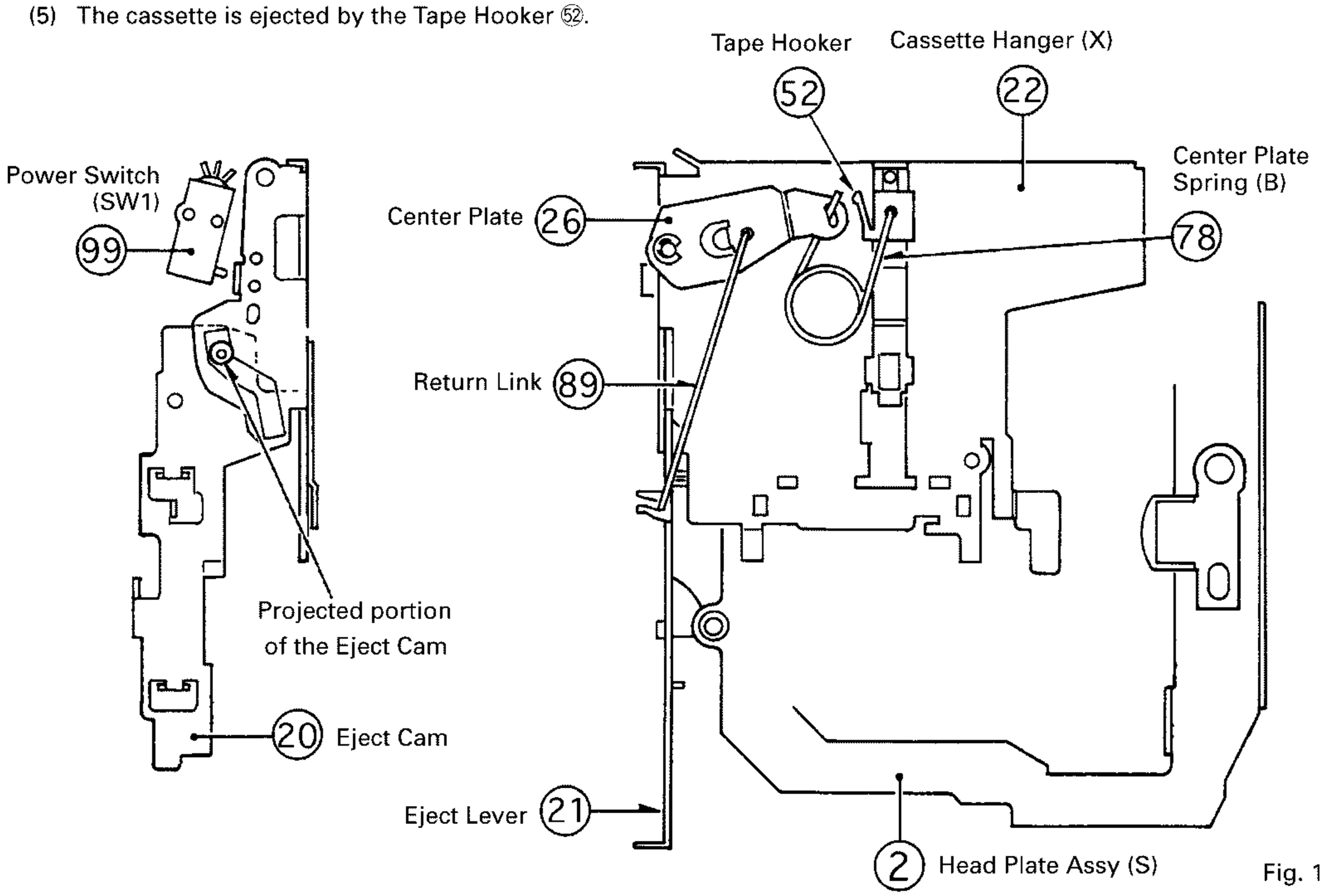
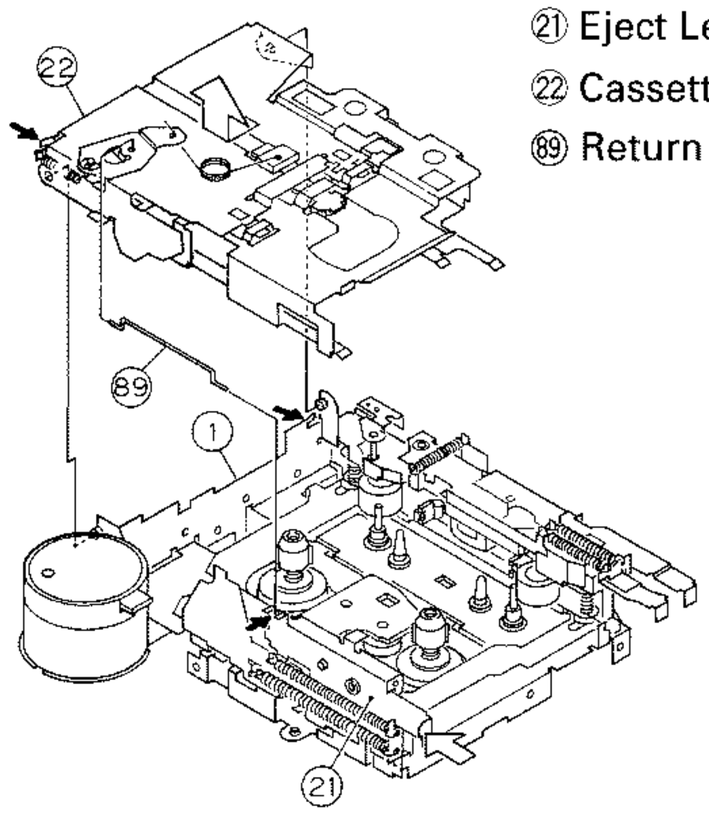
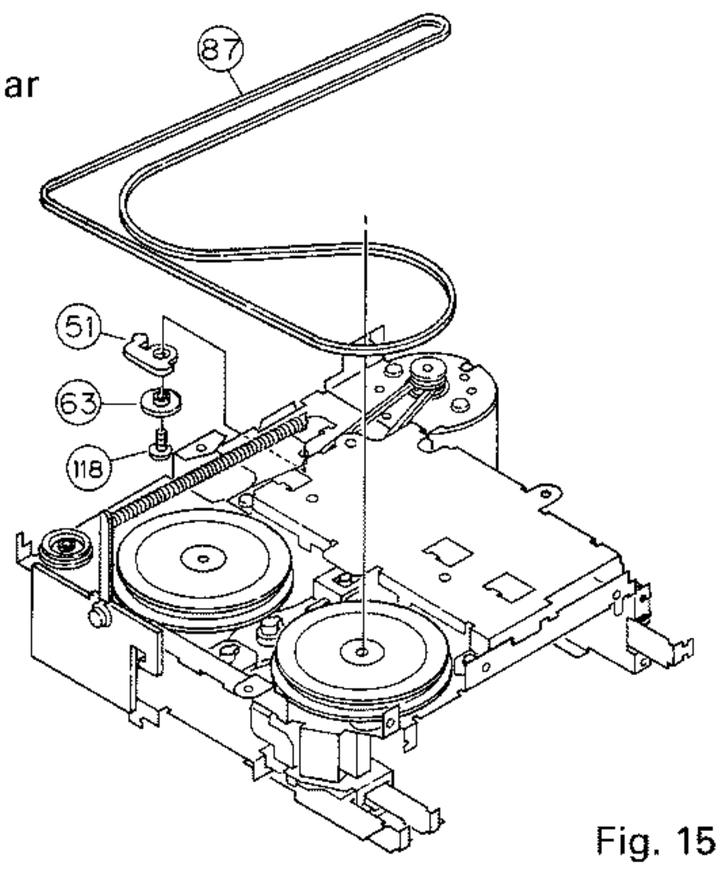
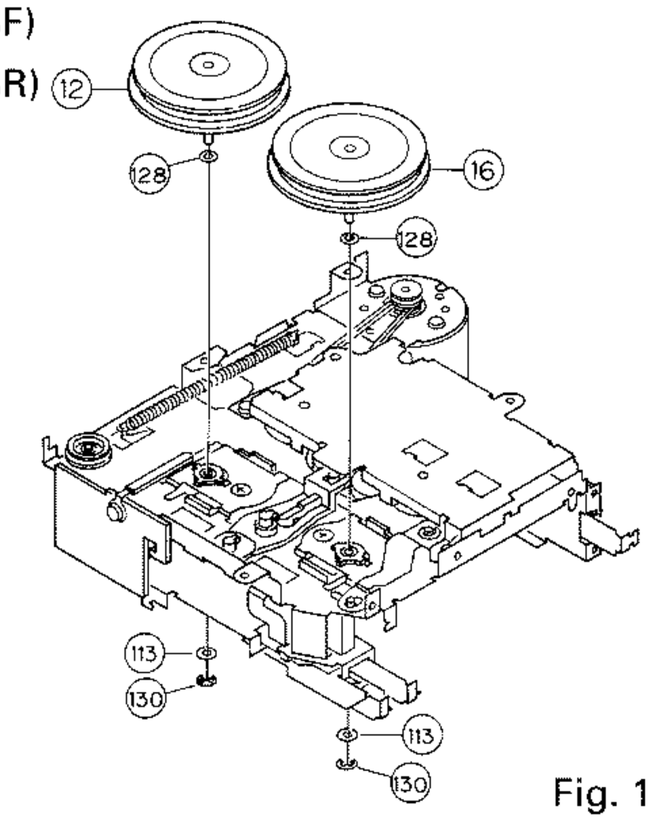
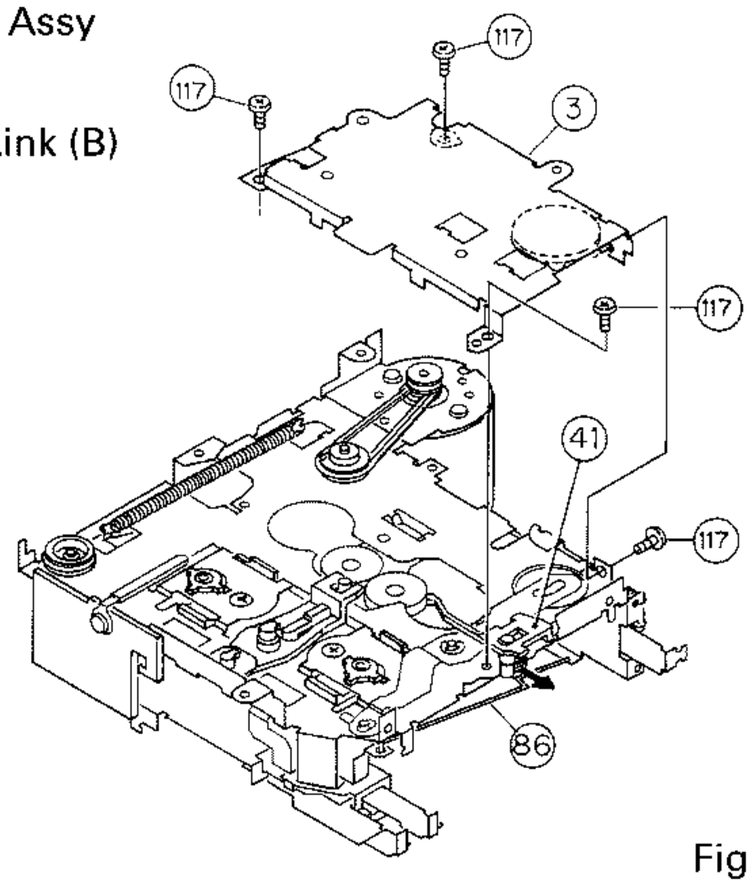
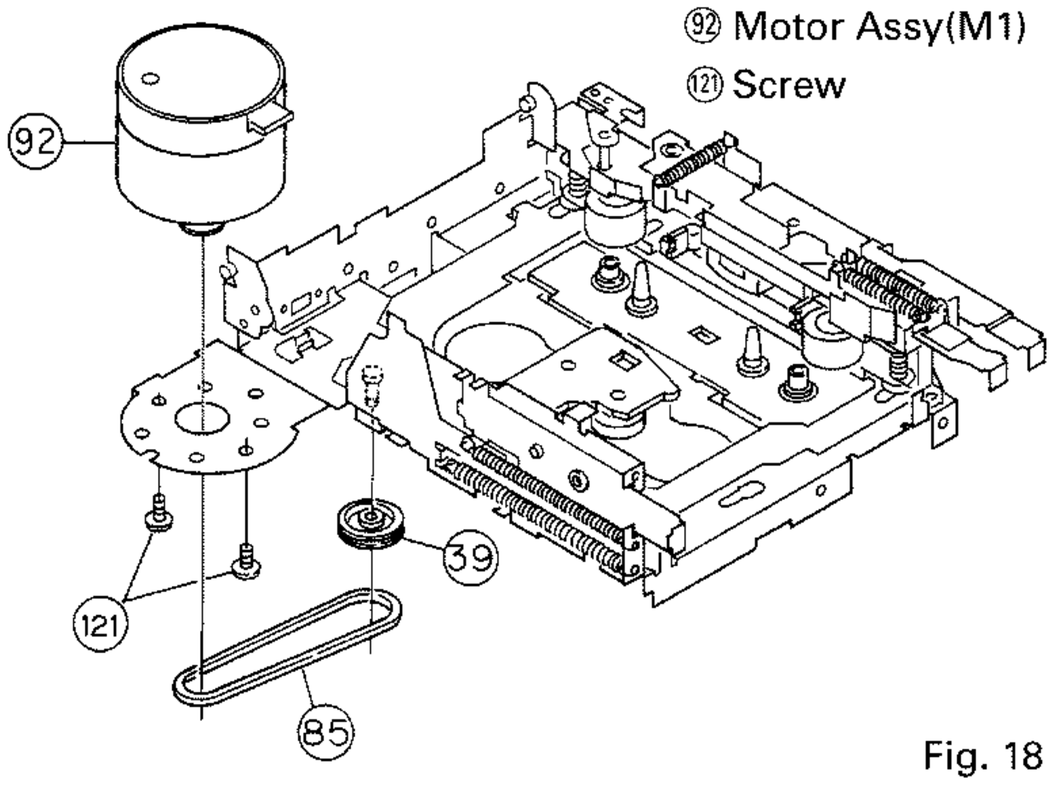
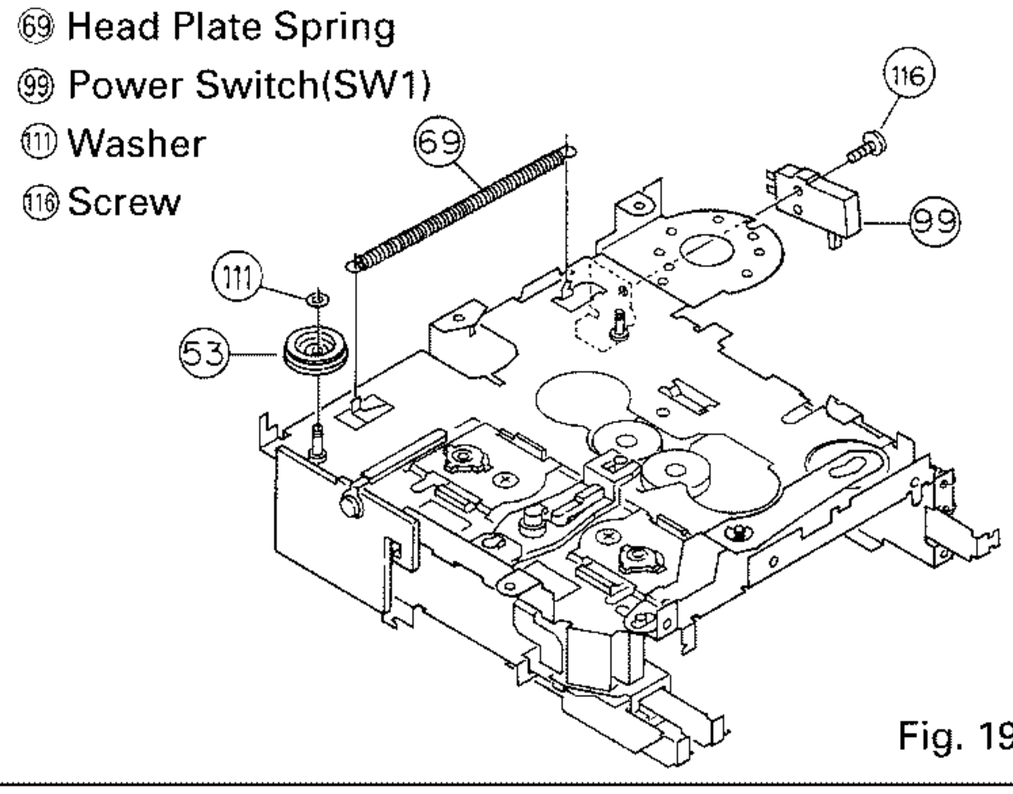
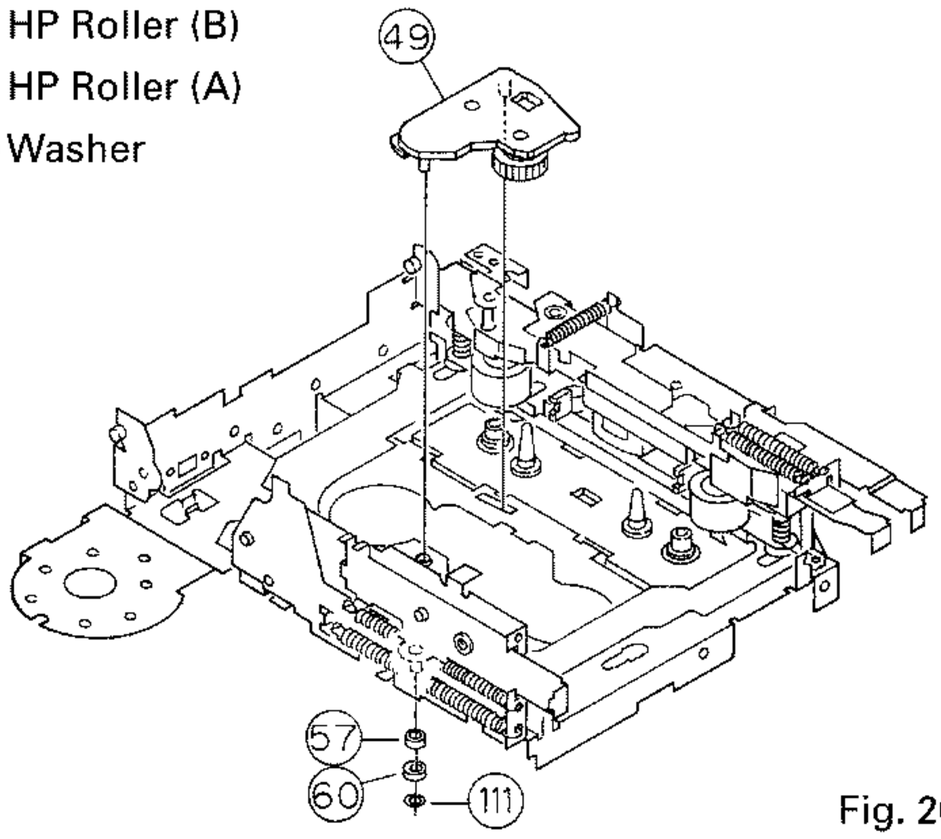
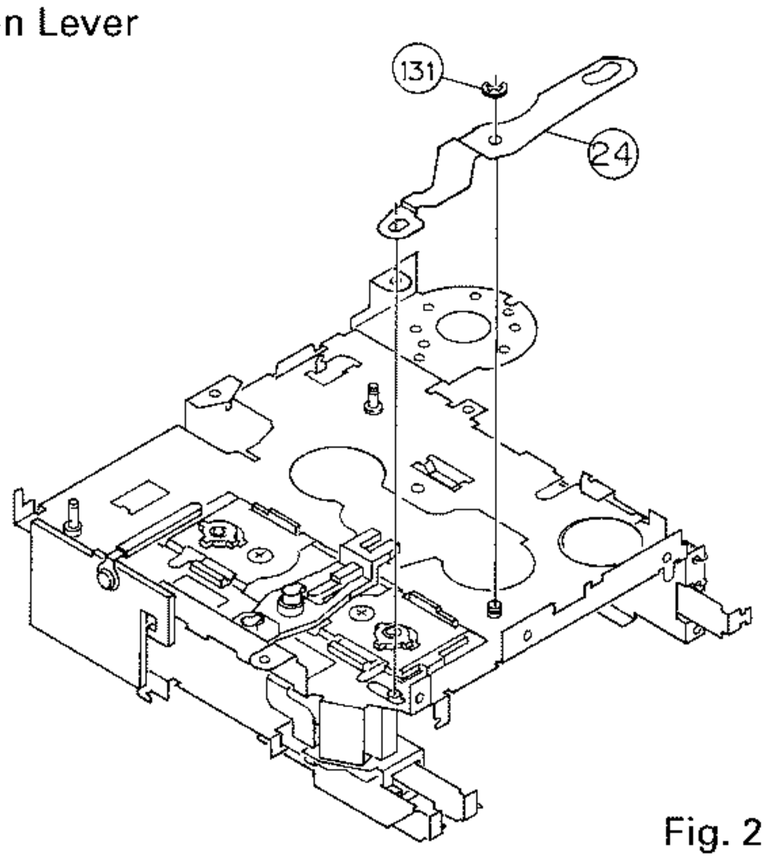
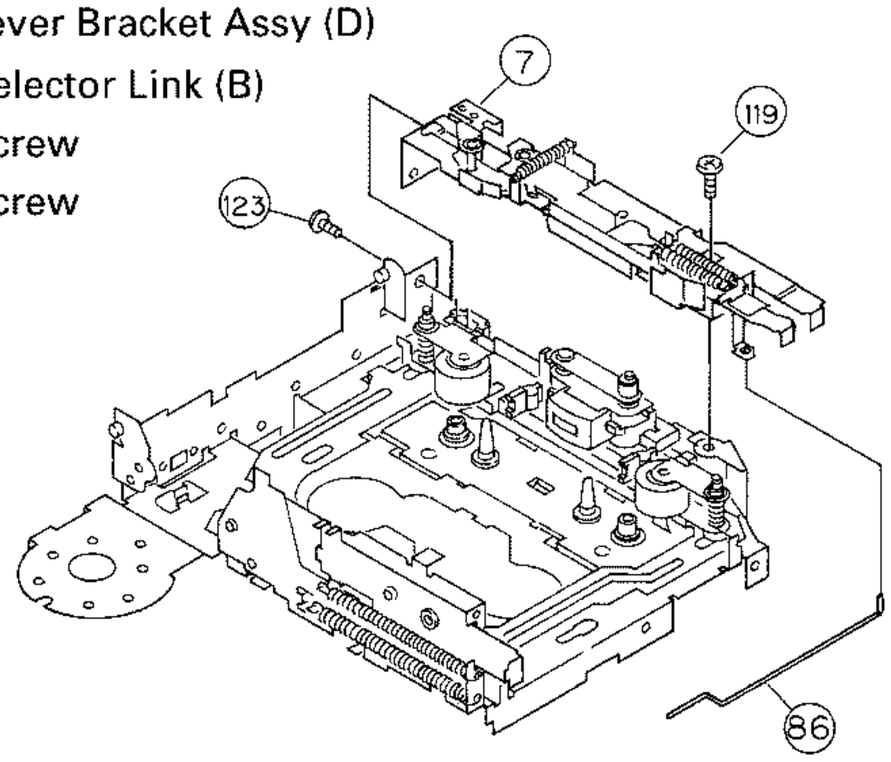


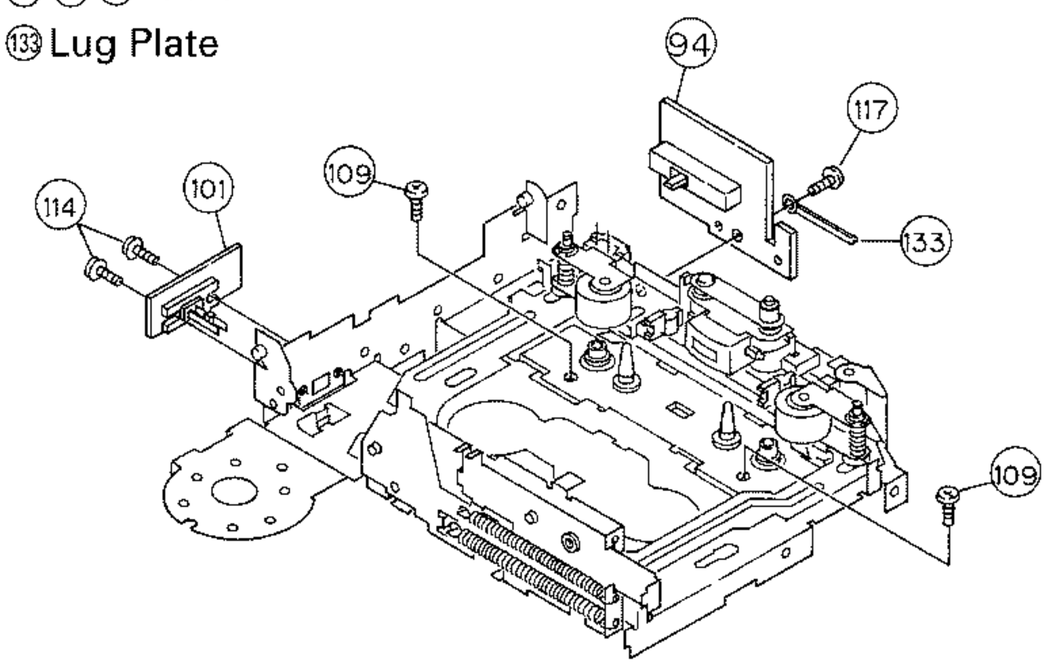
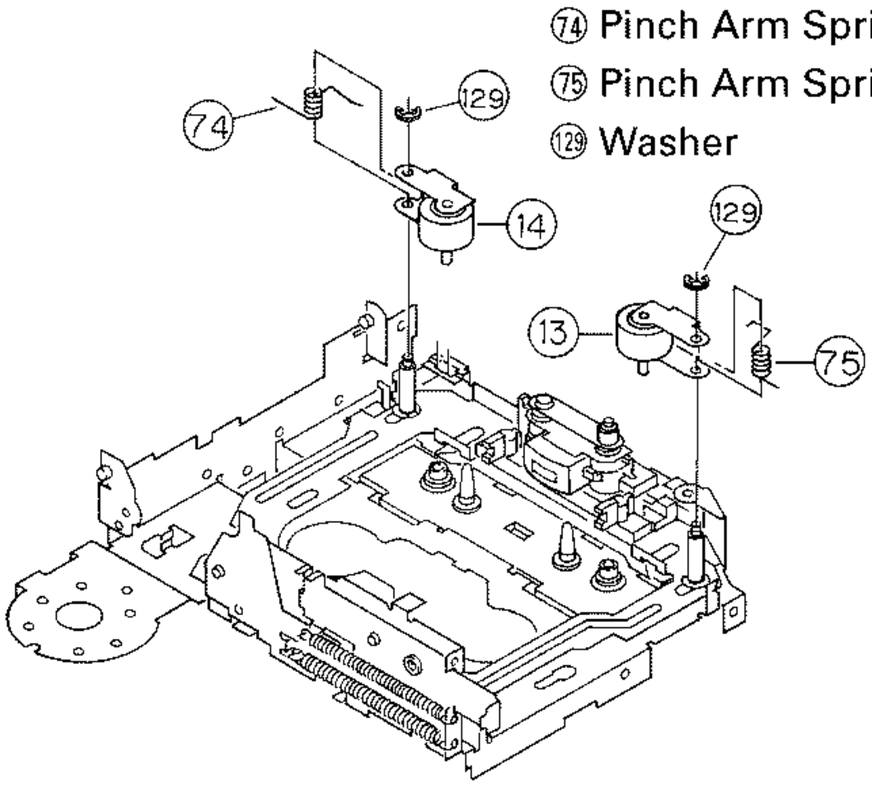
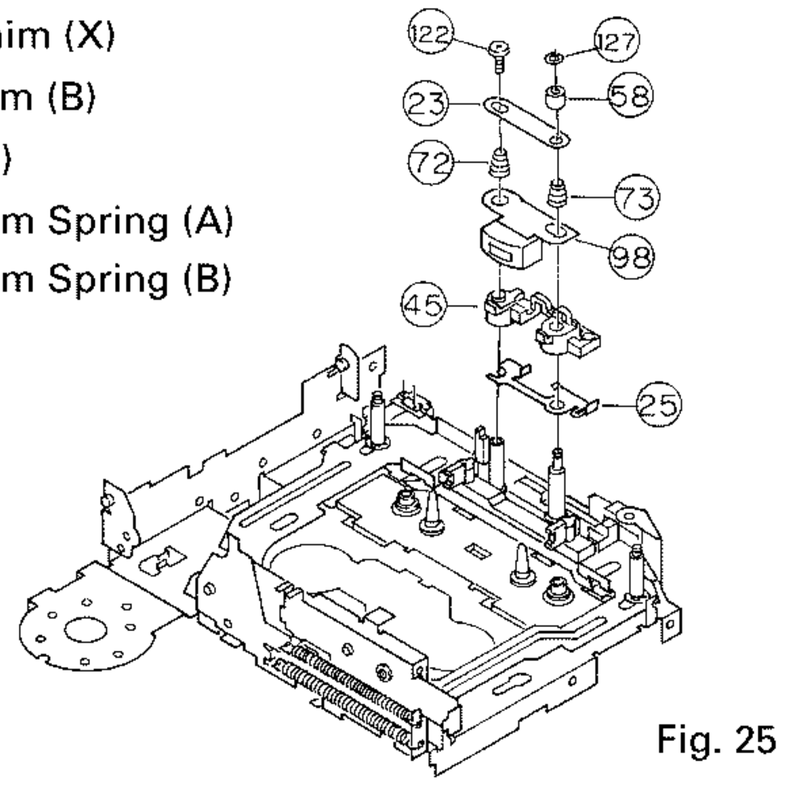

Fig. 13

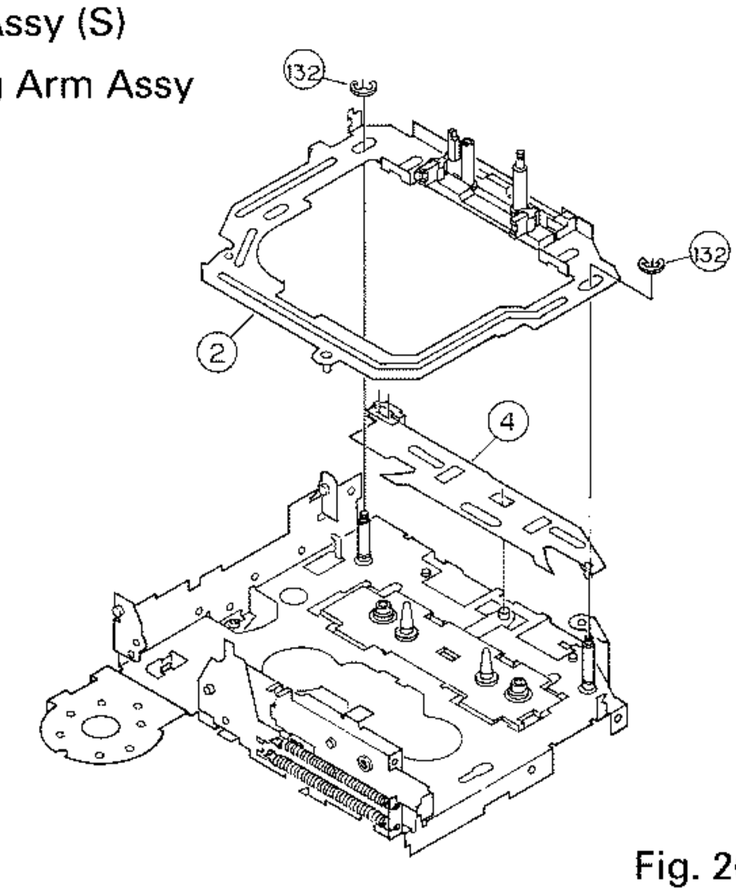
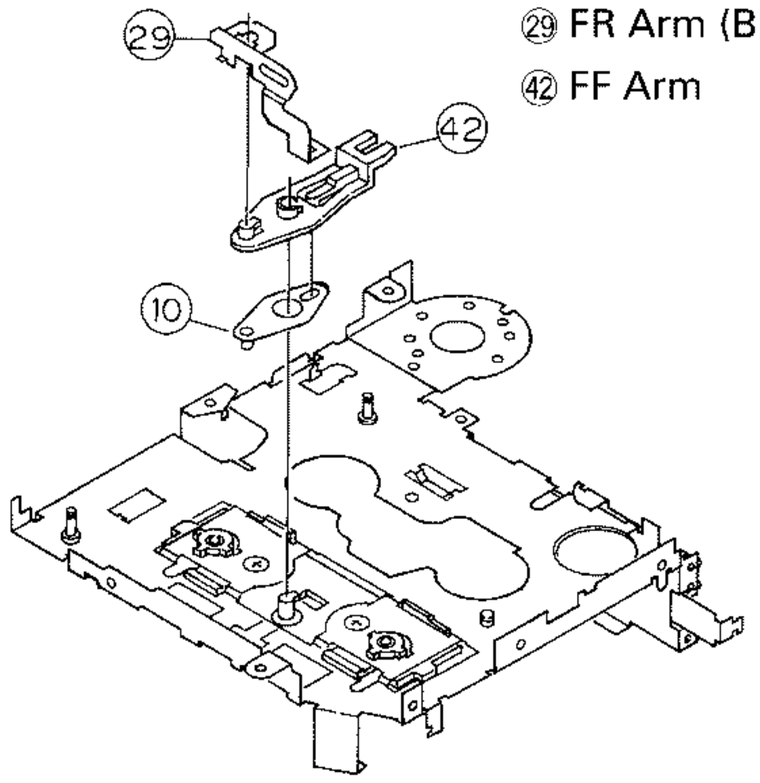
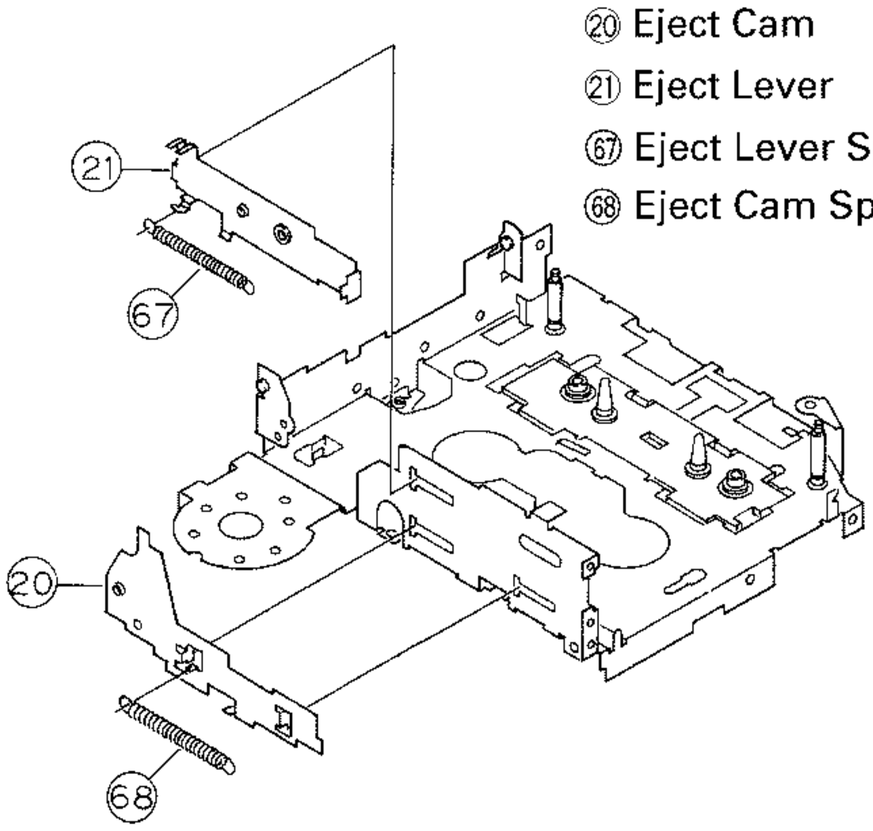
# 5. DISASSEMBLY PROCEDURES

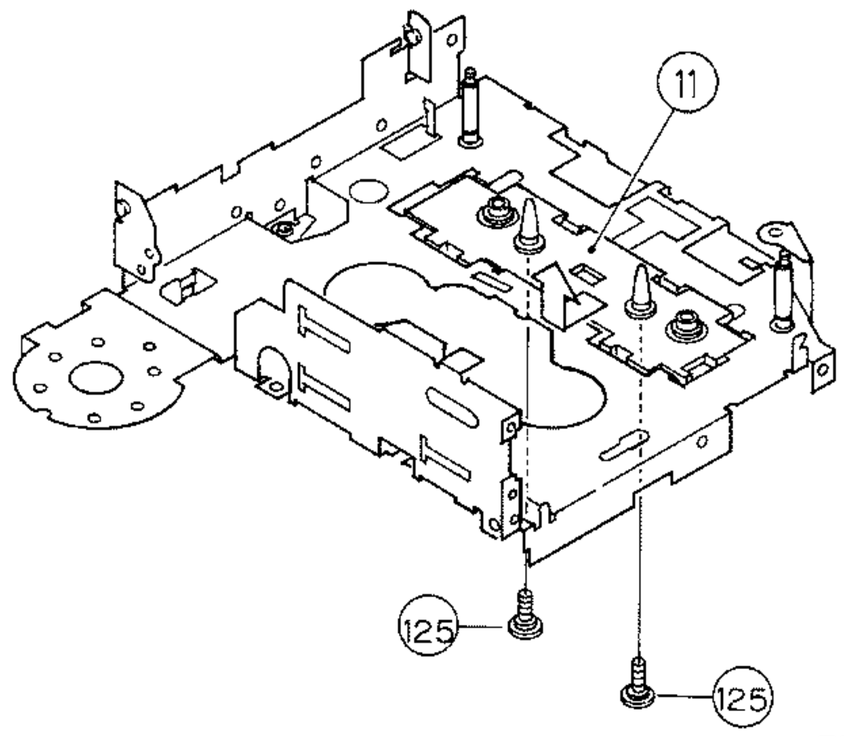
| | | |
|---|---|---|
| 1 | 1-1 Open the teeth of the Eject Lever ㉑, Cassette Hanger (X) ㉒ and Main Chassis Assy ①.<br><br>1-2 While depressing the Eject Lever ㉑, shift the Cassette Hanger (X) ㉒ toward the left side and remove it. | ① Main Chassis Assy<br>㉑ Eject Lever<br>㉒ Cassette Hanger (X)<br>㊽ Return Link<br>  <br><br>Fig. 14 |
| 2 | 2-1 Remove the Main Belt ㊼. Be careful not to damage or stain the belt with oil or grease.<br><br>2-2 Remove the Screw ⑱ to remove the Mute Arm Collar ㊸ and Mute Arm (N) ㊶. | ㊶ Mute Arm (N)<br>㊸ Mute Arm Collar<br>㊼ Main Belt<br>⑱ Screw<br>  <br><br>Fig. 15 |
| 3 | 3-1 Remove the washers ⑬⓪and the washers ①①③.<br><br>3-2 Remove the Flywheel Assys ⑫, ⑯. | ⑫ Flywheel Assy (BF)<br>⑯ Flywheel Assy (BR)<br>①①③ Washer<br>①②⑧ Washer<br>⑬⓪ Washer<br>  <br><br>Fig. 16 |

| | | |
|---|---|---|
| 4 | 4-1 Remove the Selector Link (B) ⑧⑥ from the tooth of the Ratchet ④①.<br><br>4-2 Loosen the four Screws ①①⑦ to remove the Reel Base Assy ③. | ③ Reel Base Assy<br>④① Ratchet<br>⑧⑥ Selector Link (B)<br>①①⑦ Screw<br>  <br>Fig. 17 |
| 5 | 5-1 Remove the Sub Belt (C) ⑧⑤ , Be careful not to damage or stain the belt with oil or grease.<br><br>5-2 Remove the Pulley Gear ③⑨.<br><br>5-3 Loosen the Screws ①②① and remove the Motor Assy(M1) ⑨③ . | ③⑨ Pulley Gear<br>⑧⑤ Sub Belt (C)<br>⑨② Motor Assy(M1)<br>①②① Screw<br>  <br>Fig. 18 |
| 6 | 6-1 Loosen the Screw ①①⑥ to remove the Power Switch(SW1) ⑨⑨.<br><br>6-2 Remove the Idle Pulley (A) ⑤③.<br><br>6-3 Remove the Head Plate Spring ⑥⑨. | ⑤③ Idle Pulley (A)<br>⑥⑨ Head Plate Spring<br>⑨⑨ Power Switch(SW1)<br>①①① Washer<br>①①⑥ Screw<br>  <br>Fig. 19 |

| | | |
|---|---|---|
| 7 | 7-1 Remove the TU Gear Arm Assy ㊾.<br><br>7-2 Remove the Washer ⑪ to remove the HP Roller (A) ㊿ and HP Roller (B) ㊼. | ㊾ TU Gear Arm Assy<br>㊼ HP Roller (B)<br>㊿ HP Roller (A)<br>⑪ Washer<br>  <br>Fig. 20 |
| 8 | 8-1 Remove the Washer ⑬① to remove the Conversion Lever ㉔. | ㉔ Conversion Lever<br>⑬① Washer<br>  <br>Fig. 21 |
| 9 | 9-1 Remove the Screws⑪⑨, ⑫③ to remove the Lever Bracket Assy (D) ⑦.<br><br>9-2 Remove the Selector Link (B)⑧⑥ . | ⑦ Lever Bracket Assy (D)<br>⑧⑥ Selector Link (B)<br>⑪⑨ Screw<br>⑫③ Screw<br>  <br>Fig. 22 |

| | | |
|---|---|---|
| 10 | 10-1 Remove the two Screws ⑭ to remove the Mute PWB ⑩①.<br><br>10-2 Remove the Screw ⑪⑦ to remove the SW PWB ⑨④ .<br><br>10-3 Remove the two Screws ⑩⑨. | ⑨④ SW PWB<br>⑩① Mute PWB<br>⑩⑨ ⑭ ⑪⑦ Screw<br>⑬③ Lug Plate<br>  <br><br>Fig. 23 |
| 11 | 11-1 Remove the Washer ⑫⑨ to remove the Pinch Arm (F) Assy (PS) ⑭ and Pinch Arm Spring (F) ⑦④.<br><br>11-2 Remove the Washer ⑫⑨ to remove the Pinch Arm (R) Assy (PS) ⑬ and Pinch Arm Spring (R) ⑦⑤. | ⑬ Pinch Arm (R) Assy (PS)<br>⑭ Pinch Arm (F) Assy (PS)<br>⑦④ Pinch Arm Spring (F)<br>⑦⑤ Pinch Arm Spring (R)<br>⑫⑨ Washer<br>  <br><br>Fig. 24 |
| 12 | 12-1 Remove the Washer ⑫⑦ and Screw ⑫②. Remove the FF Roller (C) ⑤⑧, SPG Support Plate ②③, Adjuster Arm Spring ⑦②, ⑦③ ,Head(HD1) ⑨⑧, Adjuster Arm (B) ④⑤ and Adjuster Shim (X) ②⑤. | ②③ SPG Support Plate<br>②⑤ Adjuster Shim (X)<br>④⑤ Adjuster Arm (B)<br>⑤⑧ FF Roller (C)<br>⑦② Adjuster Arm Spring (A)<br>⑦③ Adjuster Arm Spring (B)<br>⑨⑧ Head(HD1)<br>⑫② Screw<br>⑫⑦ Washer<br>  <br><br>Fig. 25 |

| | | |
|---|---|---|
| 13 | 13-1 Remove the two Washers ⑬② to remove the Head Plate Assy (S) ②.<br><br>13-2 Remove the FR Changing Arm Assy ④. | ② Head Plate Assy (S)<br>④ FR Changing Arm Assy<br>⑬② Washer<br>  <br><br>Fig. 26 |
| 14 | 14-1 Move the FR Arm (B) ㉙ toward the Idle Pulley (A) Shaft, then remove it from the tooth of the FF Arm ㊷.<br><br>14-2 Move the FF Arm ㊷ to the FWD side. Disengage the projecting portion from the hole of the FR Arm (A) Assy ⑩ to remove the FF Arm ㊷.<br><br>14-3 Remove the FR Arm (A) Assy ⑩. | ⑩ FR Arm (A) Assy<br>㉙ FR Arm (B)<br>㊷ FF Arm<br>  <br><br>Fig. 27 |
| 15 | 15-1 Remove the Eject Lever Spring ⑥⑦ and Eject Cam Spring ⑥⑧.<br><br>15-2 Remove the Eject Lever ㉑ and Eject Cam ⑳. | ⑳ Eject Cam<br>㉑ Eject Lever<br>⑥⑦ Eject Lever Spring<br>⑥⑧ Eject Cam Spring<br>  <br><br>Fig. 28 |

| | | |
|---|---|---|
| 16 | 16-1 Remove the two Screws ⑫⑤. Move the CM Bracket Assy (PH) ⑪ in the direction shown by the arrow, then remove the CM Bracket Assy(PH) ⑪. | ⑪ CM Bracket Assy (PH)<br>⑫⑤ Screw<br>  <br><br>Fig. 29 |

# 1. FLOWCHART OF OPERATIONAL PART MOVEMENT



| Operation | Operation system | Mechanism operation |
|---|---|---|
| Press the FF/REW Levers (AT) simultaneously. | (A) Program Arm → (B) Change Lever → (86) Selector Link (B) → (41) Ratchet → (47) Gear Lock Arm → (44) Selector Gear → (24) Conversion Lever → (4) FR Changing Arm Assy → (10) FR Arm (A) Assy → (42) FF Arm → (13) Pinch Arm (R) Assy (PS), (14) Pinch Arm (F) Assy (PS); (46) Adjuster Link (X) → (45) Adjuster Arm (B) → (98) Head (HD1); (49) TU Gear Arm Assy → (15) Reel Spindle Assy (D) | Direction operation |
| Press the FF/REW Levers (AT). | (27) Lock Arm (A) → (28) Change Lever (B) → (29) FR Arm (B) → (42) FF Arm → (49) TU Gear Arm Assy; (2) Head Plate Assy (S) → (13) Pinch Arm (R) Assy (PS), (14) Pinch Arm (F) Assy (PS) | |
| | (15) Reel Spindle Assy (D) | FF/REW operation |
| | (50) Detector Cam Assy → (43) Sensor Arm → (48) Detector Gear → (47) Gear Lock Arm → (44) Selector Gear → (24) Conversion Lever → (4) FR Changing Arm Assy → (46) Adjuster Link (X) → (27) Lock Arm (A) → (30) (31) FF/REW Lever (AT) → (2) Head Plate Assy (S); (13) Pinch Arm (R) Assy (PS) → (45) Adjuster Arm (B); (14) Pinch Arm (F) Assy (PS); (10) FR Arm (A) Assy → (42) FF Arm → (49) TU Gear Arm Assy → (15) Reel Spindle Assy (D) | Auto replay operation |
| | (32) Release Arm → (27) Lock Arm (A) → (30) (31) FF/REW Lever (AT) → (2) Head Plate Assy (S) | AMS operation |
| Press the Eject Lever. | (20) Eject Cam → (89) Return Link → (26) Center Plate → (78) Center Plate Spring (B) → (52) Tape Hooker; (2) Head Plate Assy (S); (22) Cassette Hanger (X) | Ejection operation |

# 2. NAMES OF PARTS

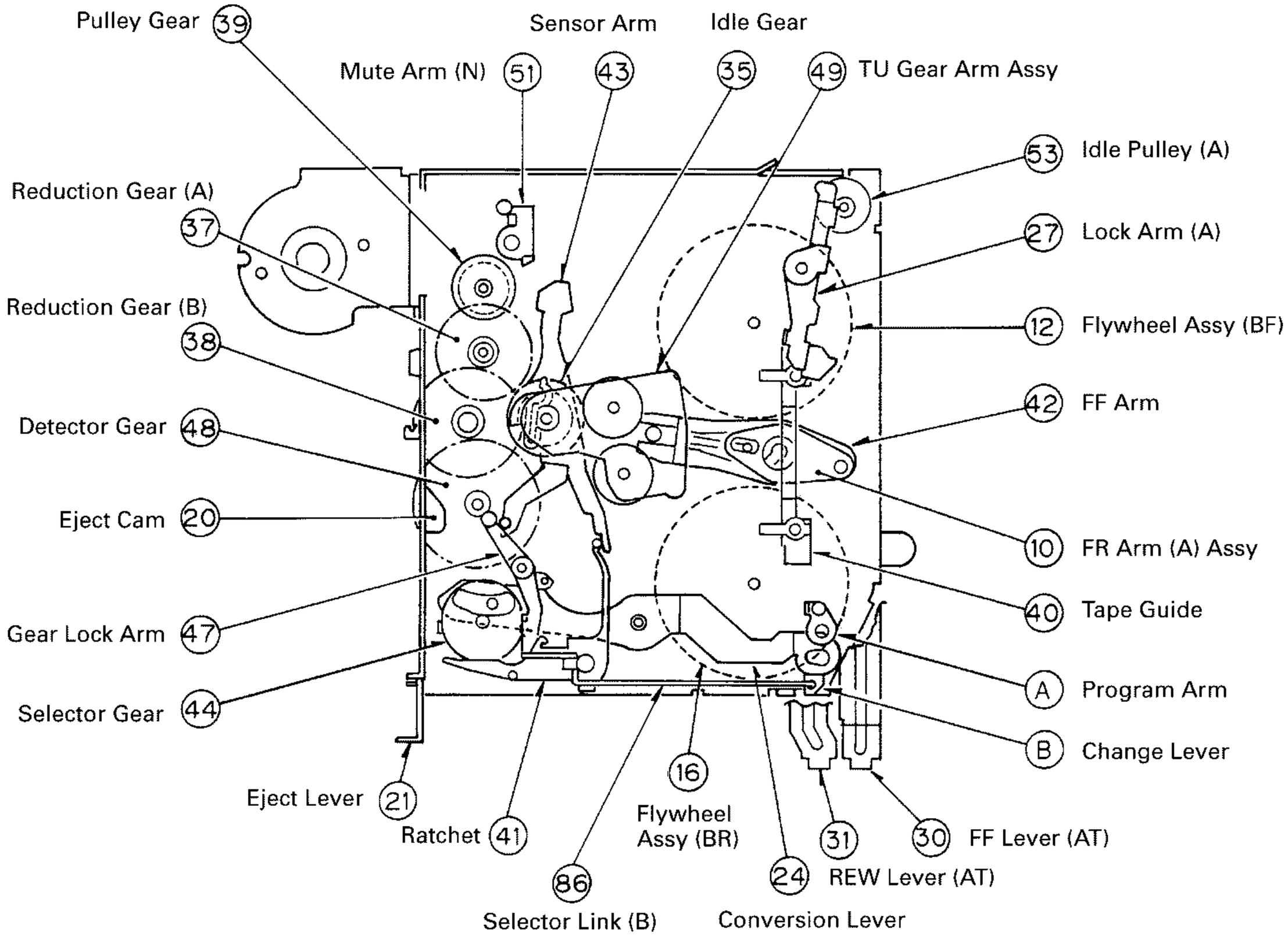



Fig. 1

# 3. OUTLINE OF ELECTRIC-PART LINKAGE

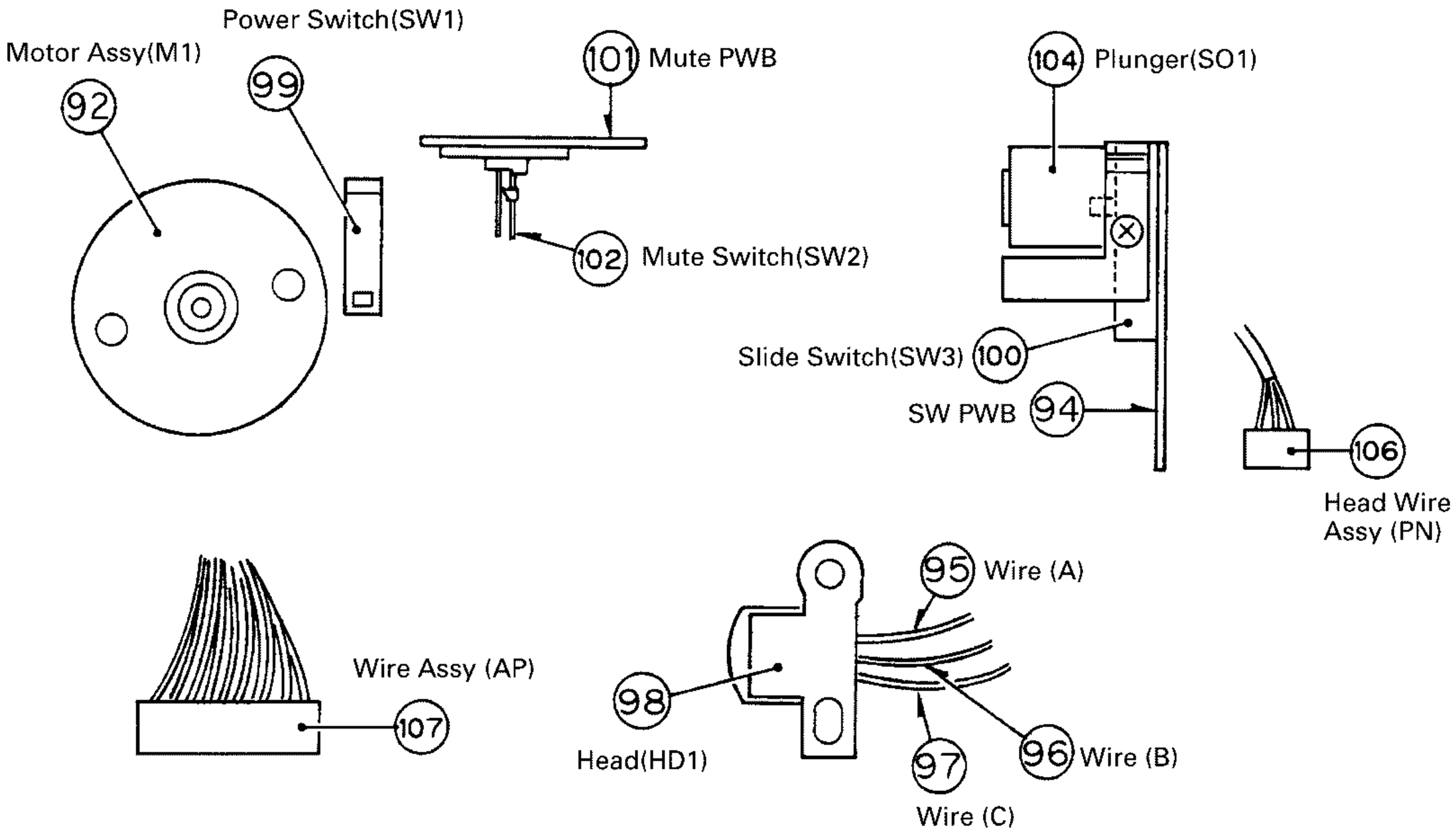



Fig. 2

# 4. MAIN OPERATIONS

## 4.1 OPERATION OF THE DETECTION MECHANISM

(1) The Detector Cam Assy ⑤⓪ generates rotational power in the direction B as shown by an arrow in the Fig.3 as the Reel Spindle Assy (D) ⑮ rotates.

(2) The Sensor Arm ④③ turns as shown by the arrows C in the Fig. 3, on the fulcrum A by the rotational force of the Detector Cam Assy ⑤⓪.

(3) The Detector Gear ④⑧ always rotates. The sensing pin of the Sensor Arm ④③ moves along the outer cam.

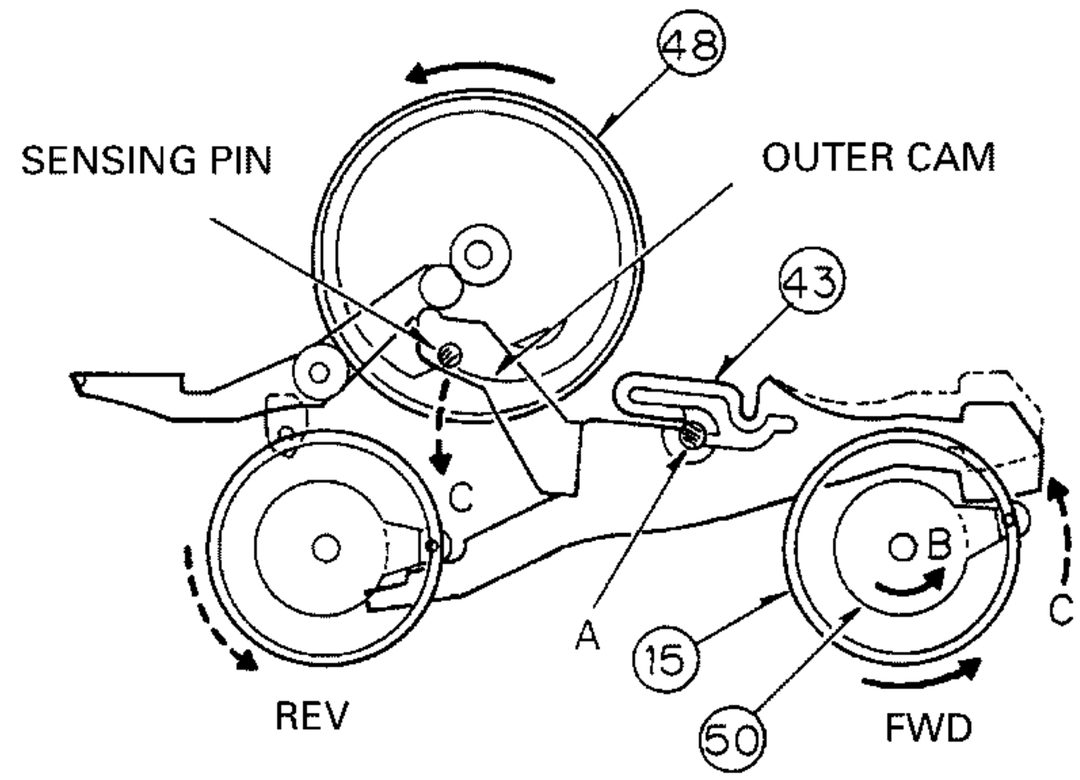



Fig. 3

(4) When the Reel Spindle Assy (D) ⑮ stops (or tape rewinding is completed), the Detector Cam Assy ⑤⓪ also stops.

(5) When the Detector Cam Assy ⑤⓪ stops, the Sensor Arm ④③ also stops turning in the direction C (Fig.3), and stands still.

(6) The sensing pin of the Sensor Arm ④③ is pushed toward the fulcrum of the Detector Gear ④⑧ by the inside cam of the Detector Gear ④⑧. (Fig.4)

(7) This movement unlocks the Gear Lock Arm ④⑦ from the Selector Gear ④④. The Selector Gear ④④ rushes toward the Detector Gear ④⑧ with the pressure of the Dash Spring ⑦⑦. When the Selector Gear ④④ gets engaged with the Detector Gear ④⑧, the Selector Gear ④④ starts rotating.

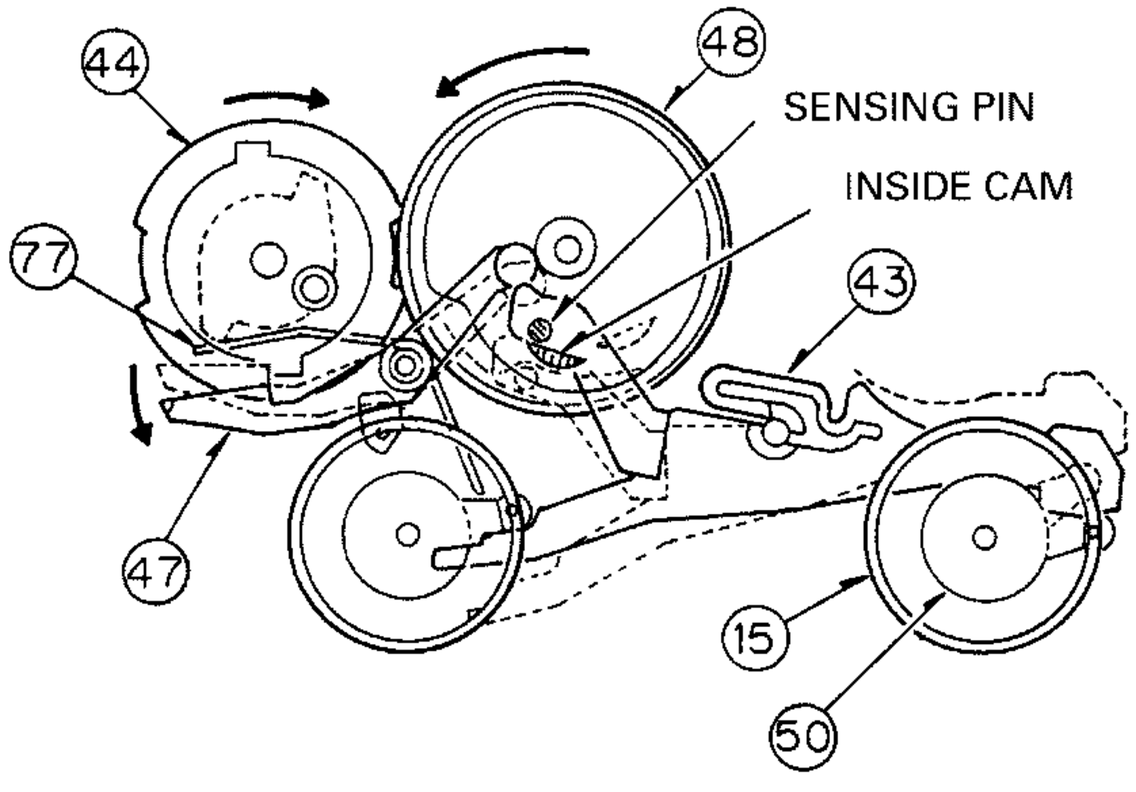



Fig. 4

# CASSETTE MECHANISM

(8) The Selector Gear ㊹ rotates by 180 degrees, and locks with the Gear Lock Arm ㊼.

(9) By a half rotation (180 degrees) of the Selector Gear ㊹, the Conversion Lever ㉔ and the FR Changing Arm Assy ④ move.

(10) The Pinch Arms (F) Assy (PS) and (R) Assy (PS) (⑭ and ⑬) and the Slide Switch(SW3) ⑩⓪ are switched by the FR Changing Arm Assy ④. At the same time, the Head(HD1) ⑨⑧ is moved upward and downward by the linked Adjuster Link (X) ㊻. The TU Gear Arm Assy ㊾ is switched by the FR Arm (A) Assy ⑩ and FF Arm ㊷ to change the direction (FWD and REV).

**FWD operation**

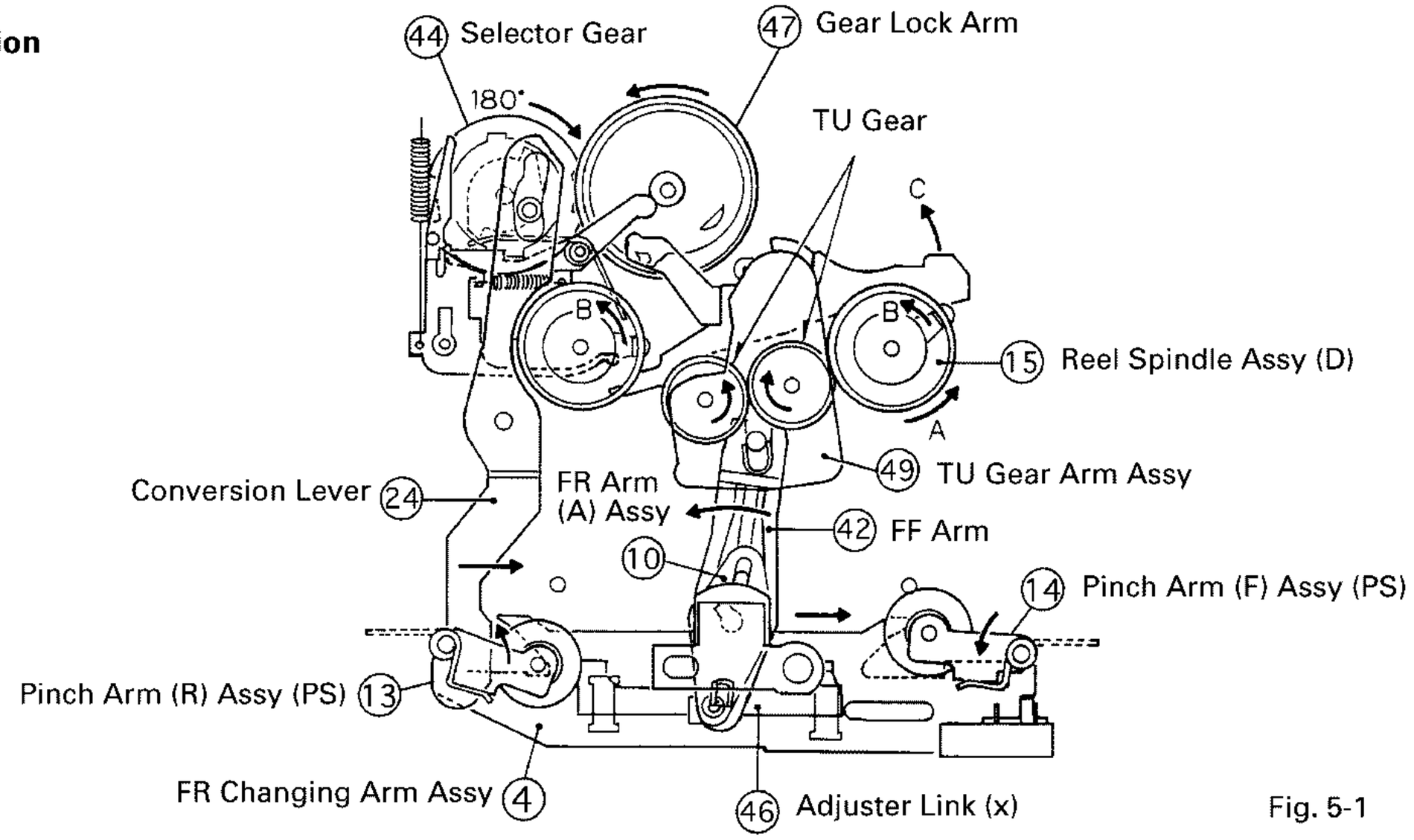



Fig. 5-1

**REV operation**

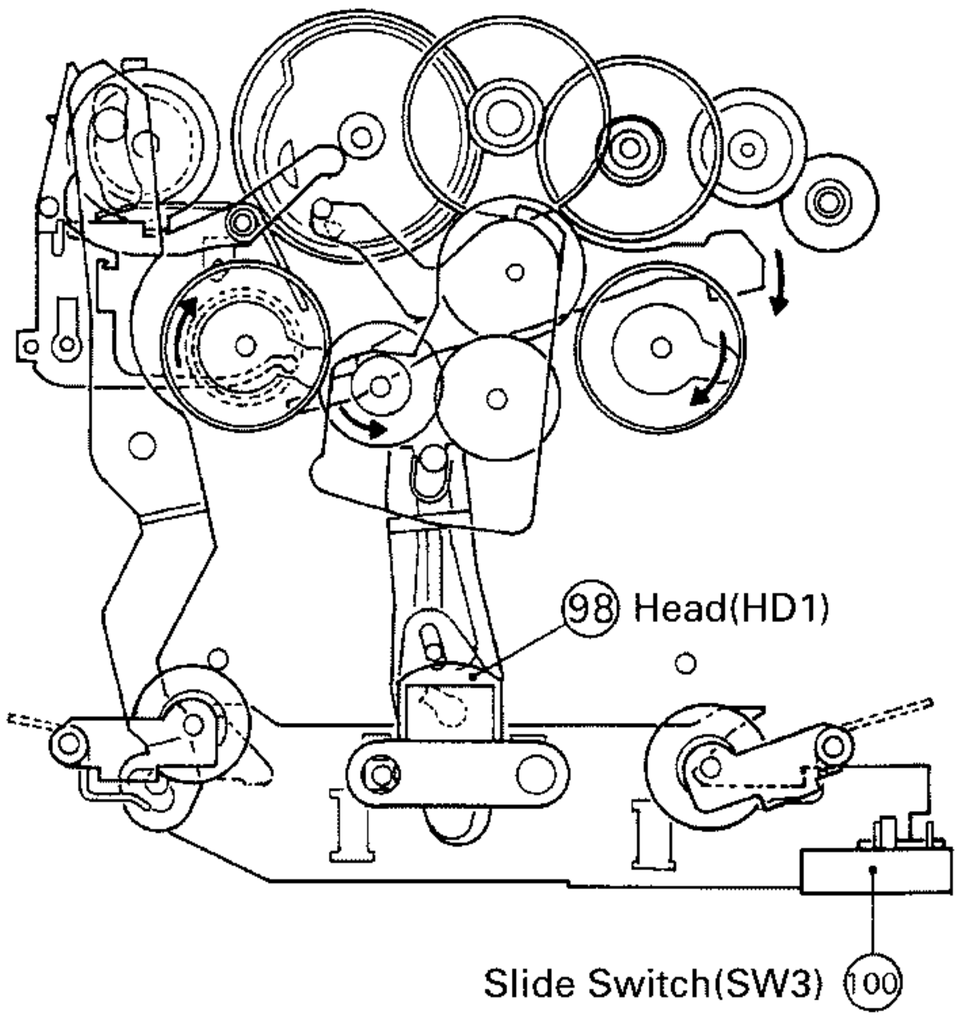



Fig. 5-2

## 4.2 MANUAL PROGRAM OPERATION

(1) Pressing the FF and REW Lever (AT) (㉚ and ㉛) simultaneously moves the Program Arm Ⓐ in the direction shown by the arrow, by the pressure of the Program Arm Spring ㉑. (Fig.6)

(2) The Program Arm Ⓐ is then moved further by the guiding hole of the lever.

(3) The movement of the Program Arm Ⓐ is conveyed to the Change Lever (B) ㉘, Selector Link (B) ㊻ , Ratchet ㊶ and then Gear Lock Arm ㊼.

(4) The Gear Lock Arm ㊼ is unlocked. The Dash Spring ㊼ causes the Selector Gear ㊹ to rush and engage with the Detector Gear ㊽. The Selector Gear ㊹ rotates.

(5) The projecting portion of the cam of the Selector Gear ㊹ taps the Ratchet ㊶. The Gear Lock Arm ㊼ is released from the Ratchet ㊶, returns to the given position, and locks the Selector Gear ㊹.

(6) Due to the Lock of the Gear Lock Arm ㊼, the Selector Gear ㊹ rotates by 180 degrees and stops.

(7) By a half rotation (180 degrees) of the Selector Gear ㊹, the Conversion Lever ㉔ and the FR Changing Arm Assy ④ moves.

(8) The Pinch Arm (F) Assy (PS) and (R) Assy (PS) (⑭ and ⑬) and the Slide Switch(SW3) ⑩⓪ are switched by the FR Changing Arm Assy ④. At the same time, the Head(HD1) ⑨⑧ is moved upward and downward by the linked Adjuster Link (X) ㊻. The TU Gear Arm Assy ㊾ is switched by the FR Arm (A) Assy ⑩ and FF Arm ㊷ to change the direction of rotation (FWD and REV) of the Reel Spindle Assy (D) ⑮.

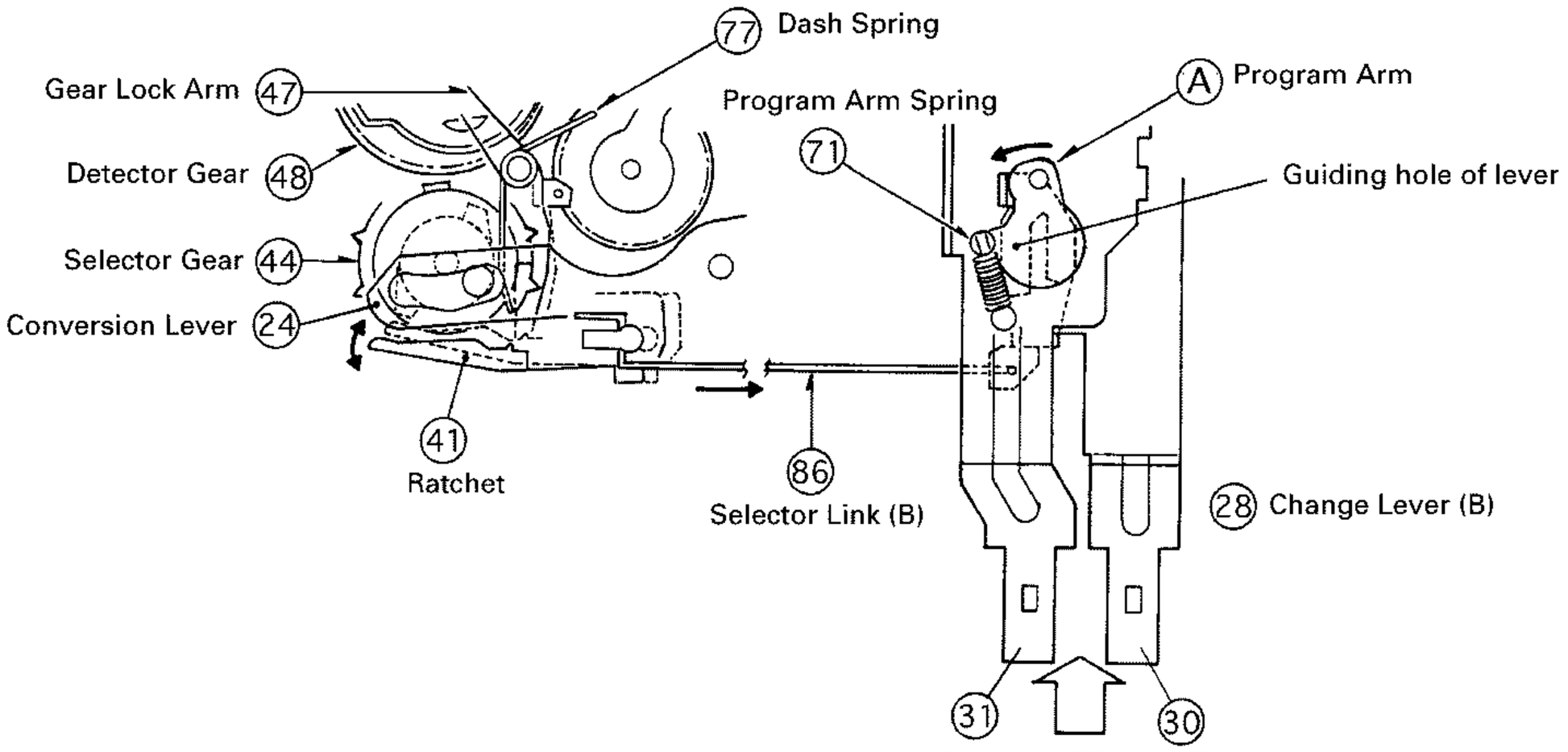
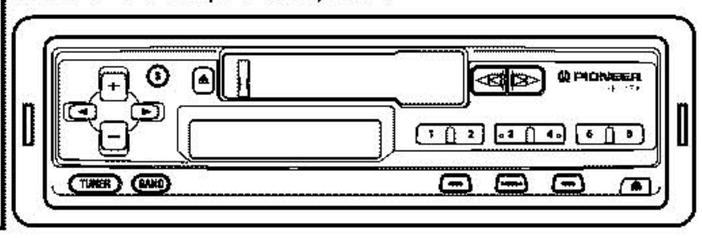



Fig. 6

# Service Manual

PIONEER®
*The Art of Entertainment*

KEH-1700/X1M/EW



ORDER NO.
CRT2134

HIGH POWER CASSETTE PLAYER WITH FM/MW/LW TUNER

# KEH-1700 X1M/EW

**NOTE:**

● **See the separate manual CRT2145 for the cassette mechanism description.**

## CONTENTS




**PIONEER ELECTRONIC CORPORATION** 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153-8654, Japan
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**PIONEER ELECTRONIC [EUROPE] N.V.** Haven 1087 Keetberglaan 1, 9120 Melsele, Belgium
**PIONEER ELECTRONICS ASIACENTRE PTE.LTD.** 501 Orchard Road, #10-00, Wheelock Place, Singapore 238880





K-ZEM. DEC.1997 Printed in Belgium

# 1. SAFETY INFORMATION

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer.
Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.
Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty.
If you are not qualified to perform the repair of this product properly and safely, you should mot risk trying to do so and refer the repair to a qualified service technician.

# 2. EXPLODED VIEWS AND PARTS LIST

## 2.1 PACKING

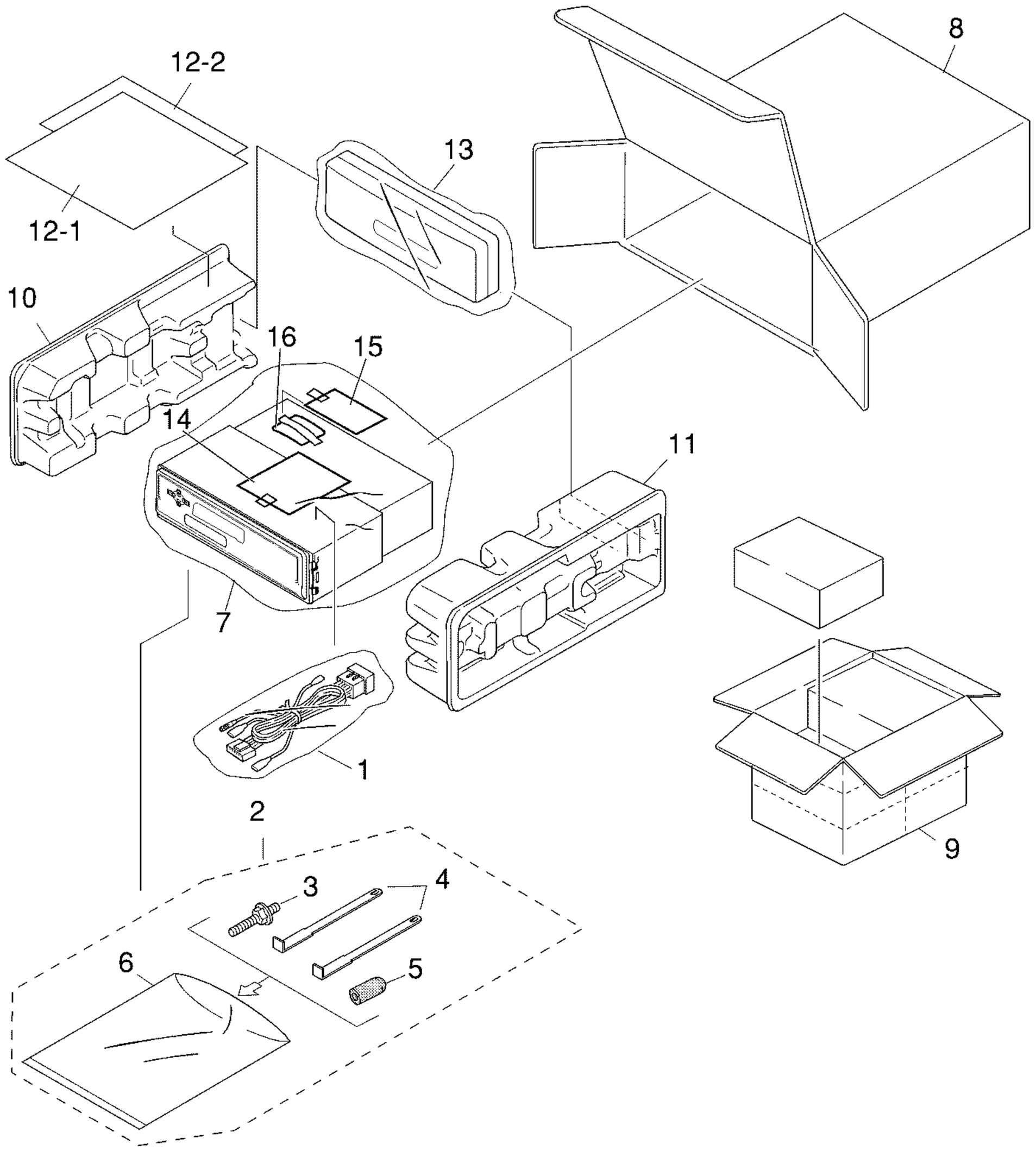



Fig. 1

**NOTE:**

- Parts marked by "*" are generally unavailable because they are not in our Master Spare Parts List.
- Screws adjacent to ∇ mark on the product are used for disassembly.

## ● PACKING SECTION PARTS LIST

| Mark | No. | Description | Part No. KEH-1700/X1M/EW | Part No. KEH-1730/X1M/EW |
|---|---|---|---|---|
| | 1 | Cord Assy | CDE5498 | CDE5498 |
| | 2 | Accessory Assy | CEA2397 | CEA2397 |
| | 3 | Screw | CBA1002 | CBA1002 |
| | 4 | Handle(x2) | CNC5395 | CNC5395 |
| | 5 | Bush | CNV3930 | CNV3930 |
| * | 6 | Polyethylene Bag | E36-615 | E36-615 |
| | 7 | Polyethylene Bag | CEG-162 | CEG-162 |
| | 8 | Carton | CHG3452 | CHG3453 |
| | 9 | Contain Box | CHL3452 | CHL3453 |
| | 10 | Protector | CHP1622 | CHP1622 |
| | 11 | Protector | CHP1623 | CHP1623 |
| | 12-1 | Owner's Manual | CRD2552 | CRD2552 |
| * | 12-2 | Warranty Card | CRY1087 | CRY1087 |
| | 13 | Case Assy | CXB1063 | CXB1063 |
| * | 14 | Caution Card | CRP1174 | CRP1174 |
| * | 15 | Caution Card | CRP1176 | CRP1176 |
| * | 16 | Silica Gel | AEN7001 | AEN7001 |

## ● Owner's Manual

| Part No. | Language |
|---|---|
| CRD2552 | English,Spanish,German<br>French,Italian,Dutch |

# 2. EXPLODED VIEWS AND PARTS LIST

## 2.1 EXTERIOR

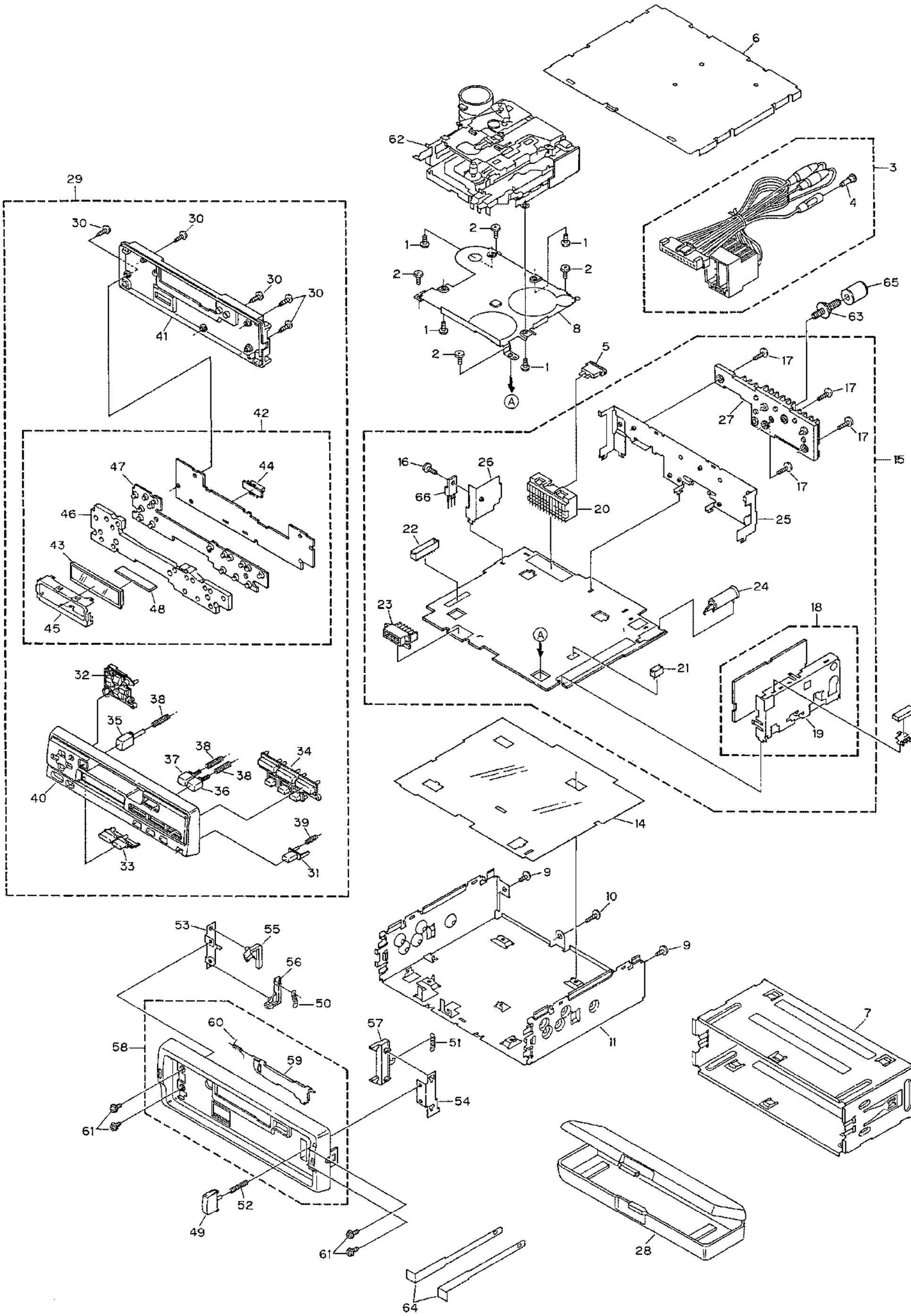



Fig. 2

## (1) EXTERIOR SECTION PARTS LIST

| Mark No. | Description | Part No. |
|---|---|---|
| 1 | Screw | BMZ26P040FMC |
| 2 | Screw | BSZ30P050FMC |
| 3 | Cord Assy | CDE5498 |
| 4 | Terminal Cover | CKX-003 |
| 5 | Fuse | CEK1136 |
| 6 | Case | CNB2251 |
| 7 | Holder | CNC6798 |
| 8 | Holder | CNC7450 |
| 9 | Screw | BSZ30P050FMC |
| 10 | Screw | BSZ30P120FMC |
| 11 | Chassis | CNA1978 |
| 12 | Holder | CNC5704 |
| 13 | Cushion | CNM4870 |
| 14 | Insulator | CNM5564 |
| 15 | Tuner Amp Unit | CWM5703 |
| 16 | Screw | BSZ30P080FMC |
| 17 | Screw | BSZ30P100FMC |
| 18 | FM/AM Tuner Unit | CWE1466 |
| 19 | Holder | CNC6554 |
| 20 | Plug(CN601) | CKM1270 |
| 21 | Plug(CN604) | CKS-567 |
| 22 | Plug(CN605) | CKS-572 |
| 23 | Connector(CN902) | CKS3581 |
| 24 | Antenna Jack(CN501) | CKX1056 |
| 25 | Panel | CNB2252 |
| 26 | Holder | CNC7470 |
| 27 | Heat Sink | CNR1460 |
| 28 | Case Assy | CXB1063 |
| 29 | Detach Grille Assy | See Contrast table(2) |
| 30 | Screw | BPZ20P120FZK |
| 31 | Button(⏏) | See Contrast table(2) |
| 32 | Button(+,–,◁,▷) | See Contrast table(2) |
| 33 | Button(TUNER,BAND) | CAC5455 |
| 34 | Button(1,2,3,4,5,6) | See Contrast table(2) |
| 35 | Button(⏏) | See Contrast table(2) |
| 36 | Button(FF) | See Contrast table(2) |
| 37 | Button(REW) | See Contrast table(2) |
| 38 | Spring | CBH2074 |
| 39 | Spring | CBH2103 |
| 40 | Grille | See Contrast table(2) |
| 41 | Cover | See Contrast table(2) |
| 42 | Keyboard Unit | See Contrast table(2) |
| 43 | LCD(LCD901) | CAW1462 |
| 44 | Connector(CN901) | CKS3580 |
| 45 | Holder | CNC7313 |
| 46 | Lighting Conductor | CNV5105 |
| 47 | Rubber | CNV5194 |
| 48 | Connector | CNV5209 |
| 49 | Button | CAC4836 |
| 50 | Spring | CBH1834 |
| 51 | Spring | CBH1835 |
| 52 | Spring | CBH1996 |
| 53 | Bracket | CNC6135 |
| 54 | Bracket | CNC6791 |
| 55 | Arm | CNV4692 |
| 56 | Arm | CNV4693 |
| 57 | Arm | CNV4728 |
| 58 | Panel Unit | See Contrast table(2) |
| 59 | Door | CAT1765 |
| 60 | Spring | CBH2126 |
| 61 | Screw | IMS20P030FZK |
| 62 | Mechanism Assy | CZX3050 |
| 63 | Screw | CBA1002 |
| 64 | Handle | CNC5395 |
| 65 | Bush | CNV3930 |
| 66 | Transistor(Q959) | 2SD2395 |

## (2) CONTRAST TABLE

**KEH-1700/X1M/EW and KEH-1730/X1M/EW are constructed the same except for the following:**

| Mark No. | Description | Part No. KEH-1700/X1M/EW | Part No. KEH-1730/X1M/EW |
|---|---|---|---|
| 29 | Detach Grille Assy | CXB1629 | CXB1630 |
| 31 | Button(⏏) | CAC4870 | CAC4993 |
| 32 | Button(+,–,◁,▷) | CAC5454 | CAC5330 |
| 34 | Button(1,2,3,4,5,6) | CAC5456 | CAC5326 |
| 35 | Button(⏏) | CAC5457 | CAC5327 |
| 36 | Button(FF) | CAC5458 | CAC5328 |
| 37 | Button(REW) | CAC5459 | CAC5329 |
| 40 | Grille | CNS4632 | CNS4634 |
| 41 | Cover | CNS4633 | CNS4645 |
| 42 | Keyboard Unit | CWM5710 | CWM5711 |
| 58 | Panel Unit | CXB2090 | CXB2091 |

## 2.2 MECHANISM ASSY

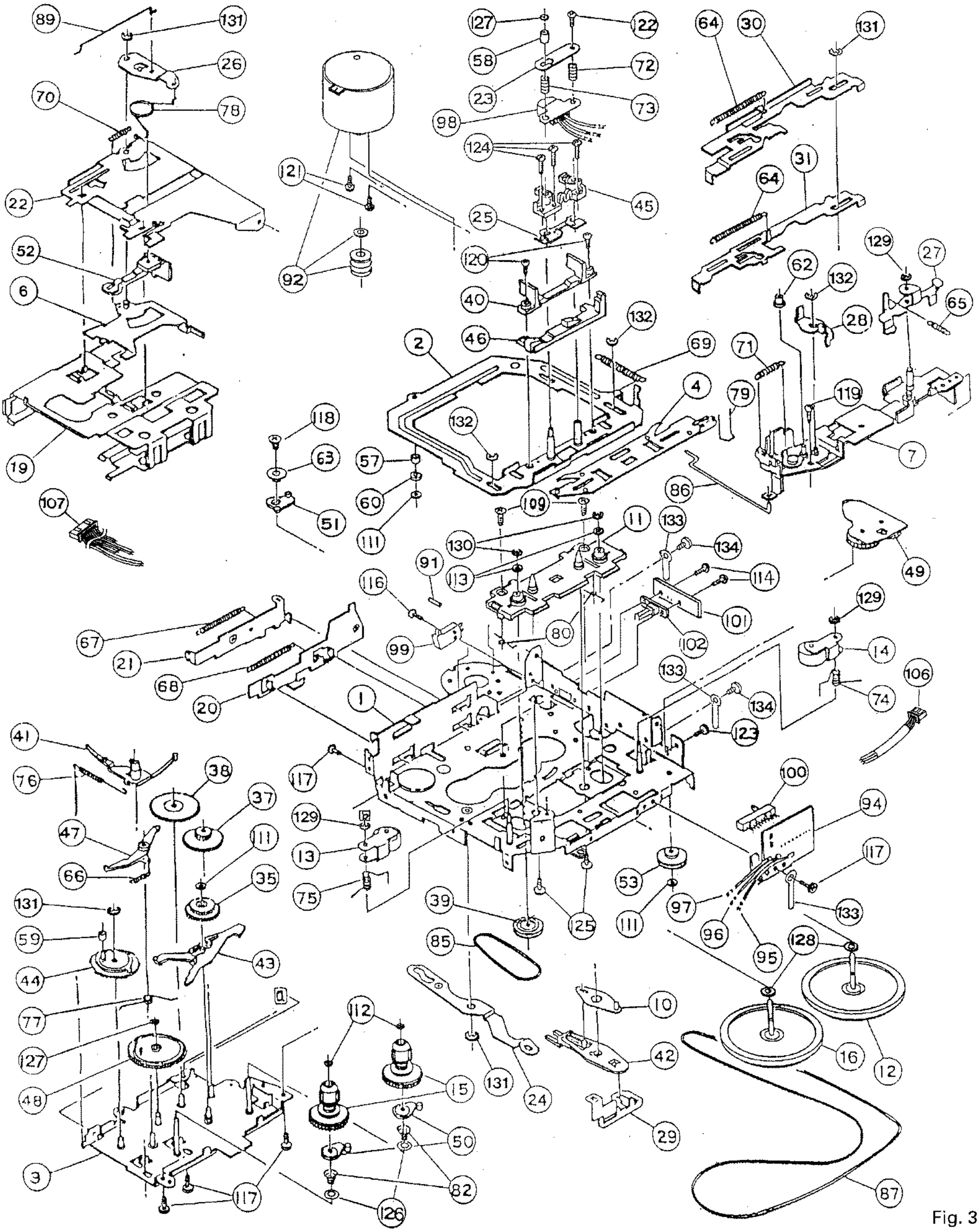



Fig. 3

## ● MECHANISM ASSY SECTION PARTS LIST

| Mark No. | Description | Part No. |
|---|---|---|
| 1 | Main Chassis Assy | X-0036-1001 |
| 2 | Head Plate Assy (S) | X-0036-6082 |
| 3 | Reel Base Assy | X-0036-1009 |
| 4 | FR Changing Arm Assy | X-0036-1010 |
| 5 | ••••• | |
| 6 | Eject Cam Lock Assy | X-0036-1019 |
| 7 | Lever Bracket Assy (D) | X-0036-6077 |
| 8 | ••••• | |
| 9 | ••••• | |
| 10 | FR Arm (A) Assy | X-0036-1025 |
| 11 | CM Bracket Assy (PH) | X0138-2006-5 |
| 12 | Flywheel Assy (BF) | 10036-6010-0 |
| 13 | Pinch Arm (R) Assy (PS) | 1-0036-6013 |
| 14 | Pinch Arm (F) Assy (PS) | 1-0036-6014 |
| 15 | Reel Spindle Assy (D) | X-0036-6081 |
| 16 | Flywheel Assy (BR) | 10036-6010-1 |
| 17 | ••••• | |
| 18 | ••••• | |
| 19 | Cassette Holder (X) | 1-0138-1010 |
| 20 | Eject Cam | 1-0036-1006 |
| 21 | Eject Lever | 1-0036-1007 |
| 22 | Cassette Hanger (X) | 1-0138-1002 |
| 23 | SPG Support Plate | 1-0036-1015 |
| 24 | Conversion Lever | 1-0036-1016 |
| 25 | Adjuster Shim (X) | 1-0138-1006 |
| 26 | Center Plate | 1-0036-1018 |
| 27 | Lock Arm (A) | 1-0036-1029 |
| 28 | Change Lever (B) | 1-0036-1023 |
| 29 | FR Arm (B) | 1-0036-1026 |
| 30 | FF Lever (AT) | 1-0036-1051 |
| 31 | REW Lever (AT) | 1-0036-1053 |
| 32 | ••••• | |
| 33 | ••••• | |
| 34 | ••••• | |
| 35 | Idle Gear | 1-0036-2001 |
| 36 | ••••• | |
| 37 | Reduction Gear (A) | 10036-2004-0 |
| 38 | Reduction Gear (B) | 1-0036-2003 |
| 39 | Pulley Gear | 10036-2005-0 |
| 40 | Tape Guide | 1-0038-2018 |
| 41 | Ratchet | 1-0036-2007 |
| 42 | FF Arm | 1-0036-2008 |
| 43 | Sensor Arm | 1-0036-2009 |
| 44 | Selector Gear | 1-0036-2010 |
| 45 | Adjuster Arm (B) | 10138-2005-3 |
| 46 | Adjuster Link (X) | 1-0138-2004 |
| 47 | Gear Lock Arm | 1-0038-2014 |
| 48 | Detector Gear | 1-0036-2014 |
| 49 | TU Gear Arm Assy | X-0036-2015 |
| 50 | Detector Cam Assy | X-0136-2001 |
| 51 | Mute Arm (N) | 1-0038-2034 |
| 52 | Tape Hooker | 1-0058-2004 |
| 53 | Idle Pulley (A) | 10058-2021-5 |
| 54 | ••••• | |
| 55 | ••••• | |
| 56 | ••••• | |
| 57 | HP Roller (B) | 1-0036-3024 |
| 58 | FF Roller (C) | 1-0038-3071 |
| 59 | Collar | 1-0036-3018 |
| 60 | HP Roller (A) | 1-0036-3002 |
| 61 | ••••• | |
| 62 | Program Roller | 1-0038-3012 |
| 63 | Mute Arm Collar | 1-0038-3015 |
| 64 | FF/REW Lever Spring | 1-0036-4001 |
| 65 | Lock Lever Spring (A) | 1-0036-4022 |
| 66 | Gear Lock Arm Spring | 1-0036-4003 |
| 67 | Eject Lever Spring | 1-0036-4004 |
| 68 | Eject Cam Spring | 1-0036-4005 |
| 69 | Head Plate Spring | 1-0036-4006 |
| 70 | Eject Cam Lock Spring | 1-0036-4007 |
| 71 | Program Arm Spring | 1-0036-4008 |
| 72 | Adjuster Arm Spring (A) | 1-0036-4010 |
| 73 | Adjuster Arm Spring (B) | 1-0036-4011 |
| 74 | Pinch Arm Spring (F) | 1-0036-4012 |
| 75 | Pinch Arm Spring (R) | 1-0036-4013 |
| 76 | Ratchet Spring | 1-0038-4014 |
| 77 | Dash Spring | 1-0036-4015 |
| 78 | Center Plate Spring (B) | 1-0036-4023 |
| 79 | Changing Arm Spring | 1-0036-4017 |
| 80 | Earth Spring (R) | 1-0036-4018 |
| 81 | ••••• | |
| 82 | Back Tension Spring | 1-0138-4001 |
| 83 | ••••• | |
| 84 | ••••• | |
| 85 | Sub Belt (C) | 1-0036-5018 |
| 86 | Selector Link (B) | 1-0138-5001 |
| 87 | Main Belt | 1-0036-5020 |
| 88 | ••••• | |
| 89 | Return Link | 1-0036-5006 |
| 90 | ••••• | |

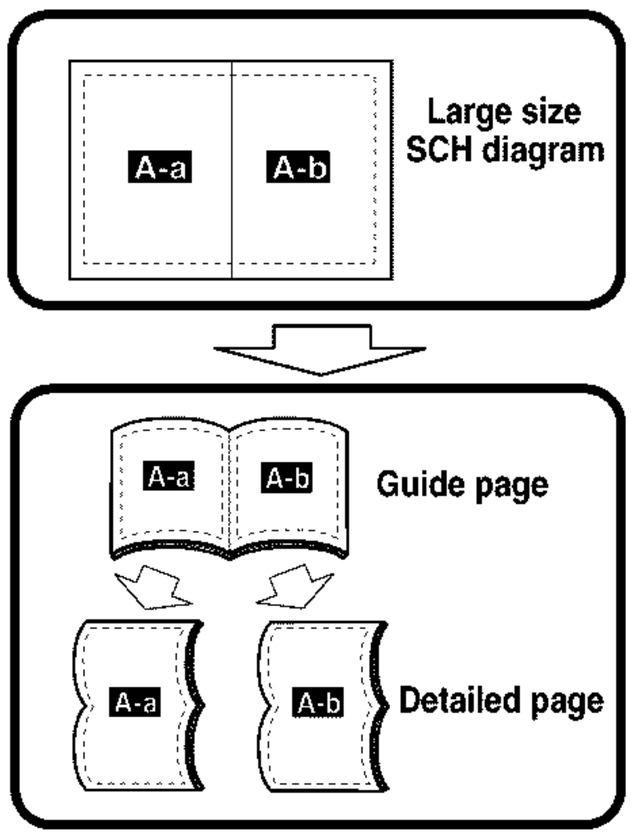
| Mark No. | Description | Part No. |
|---|---|---|
| 91 | Insulate Tube | 1-0058-5016 |
| 92 | Motor Assy(M1) | X-0036-6075 |
| 93 | ••••• | |
| 94 | SW PWB | 1-0036-7001 |
| 95 | Wire (A) | 1-0036-7002 |
| 96 | Wire (B) | 1-0036-7003 |
| 97 | Wire (C) | 1-0036-7004 |
| 98 | Head(HD1) | 10036-7016-1 |
| 99 | Power Switch(SW1) | 1-0036-7034 |
| 100 | Slide Switch(SW3) | 1-0036-7007 |
| 101 | Mute PWB | 1-0138-7002 |
| 102 | Mute Switch(SW2) | 1-0138-7087 |
| 103 | ••••• | |
| 104 | ••••• | |
| 105 | ••••• | |
| 106 | Head Wire Assy (PN) | 1-0036-7107 |
| 107 | Wire Assy (SP) | 1-0036-7108 |
| 108 | ••••• | |
| 109 | Screw(M1.7×3) | 213317030-C2 |
| 110 | ••••• | |
| 111 | Washer | WT12D030D025 |
| 112 | Washer | 1-0036-5023 |
| 113 | Washer | WA21D032D025 |
| 114 | Screw(M1.7×4) | 213317040-C2 |
| 115 | ••••• | |

| Mark No. | Description | Part No. |
|---|---|---|
| 116 | Screw(M1.7×6) | 213317060-C2 |
| 117 | Screw(M2×3) | 213820030-C2 |
| 118 | Screw(M2×4) | 213620040-F2 |
| 119 | Screw(M2×4) | 213320040-C1 |
| 120 | Screw | JGZ20P070FZK |
| 121 | Screw | JGZ20P025FZK |
| 122 | Screw | JFZ20P040FZK |
| 123 | Screw | UFZ20P030FZK |
| 124 | Screw(M2×5) | 1-0138-5002 |
| 125 | Screw(M2×5) | 1-0036-5005 |
| 126 | Washer | 1-0136-5001 |
| 127 | Washer | 1-0036-5024 |
| 128 | Washer | 1-0036-5028 |
| 129 | Washer | YE15FUC |
| 130 | Washer | 217116032-96 |
| 131 | Washer | YE20FUC |
| 132 | Washer | YE25FUC |
| 133 | Lug Plate | 217326280-36 |
| 134 | Screw(M2.6×2.5) | 213326025-C2 |

# 3. SCHEMATIC DIAGRAM

## 3.1 OVERALL CONNECTION DIAGRAM(GUIDE PAGE)

**Note: When ordering service parts, be sure to refer to "EXPLODED VIEWS AND PARTS LIST" or "ELECTRICAL PARTS LIST".**




A-a

A TUNER AMP UNIT

B FM/AM TUNER UNIT

IC601 PD4875A SYSTEM CONTROLLER

IC451

IC251 LA3161P (EQ GAIN +49dB)

Q961 DTC114ES

Q962 2SA933S

Q963 DTC114ES

Q965 2SB1242

Q966 DTC143TS

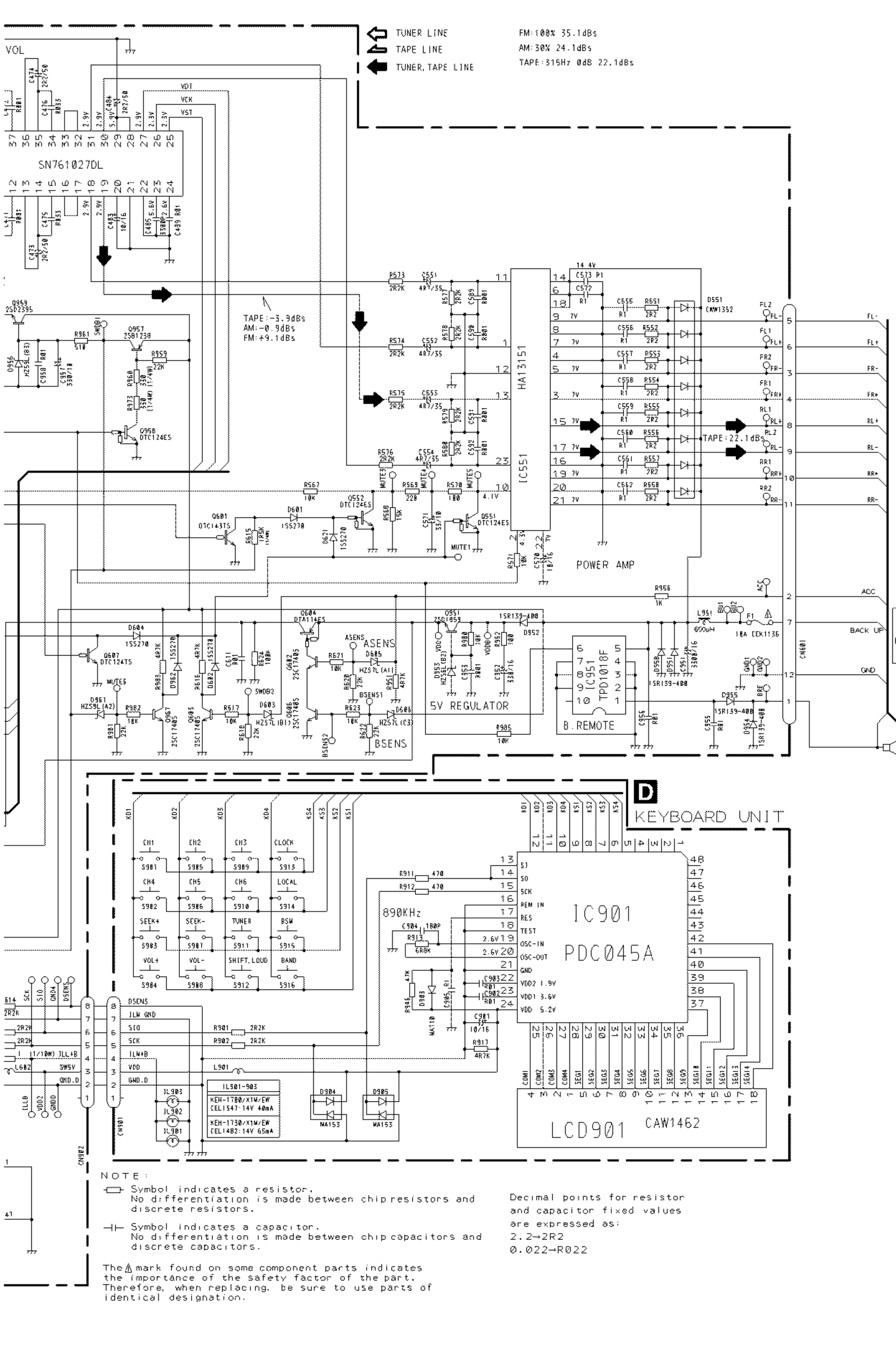
CN684

CN685

C CE MECHANISM ASSY

A-b

# A-b




NOTE :

Symbol indicates a resistor.
No differentiation is made between chip resistors and discrete resistors.

Symbol indicates a capacitor.
No differentiation is made between chip capacitors and discrete capacitors.

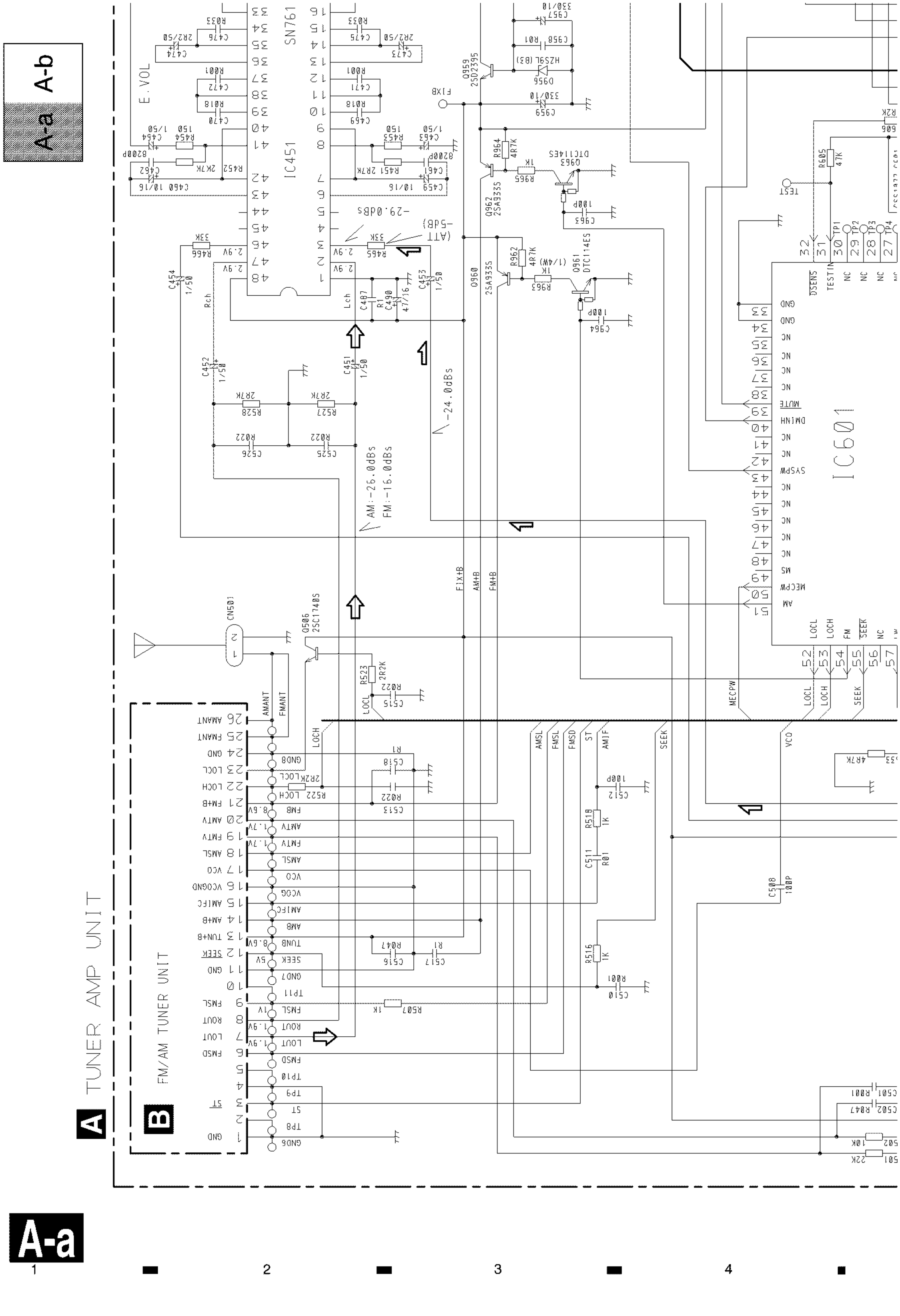
The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

Decimal points for resistor and capacitor fixed values are expressed as:
2.2→2R2
0.022→R022

Fig. 4

A-b

A-a



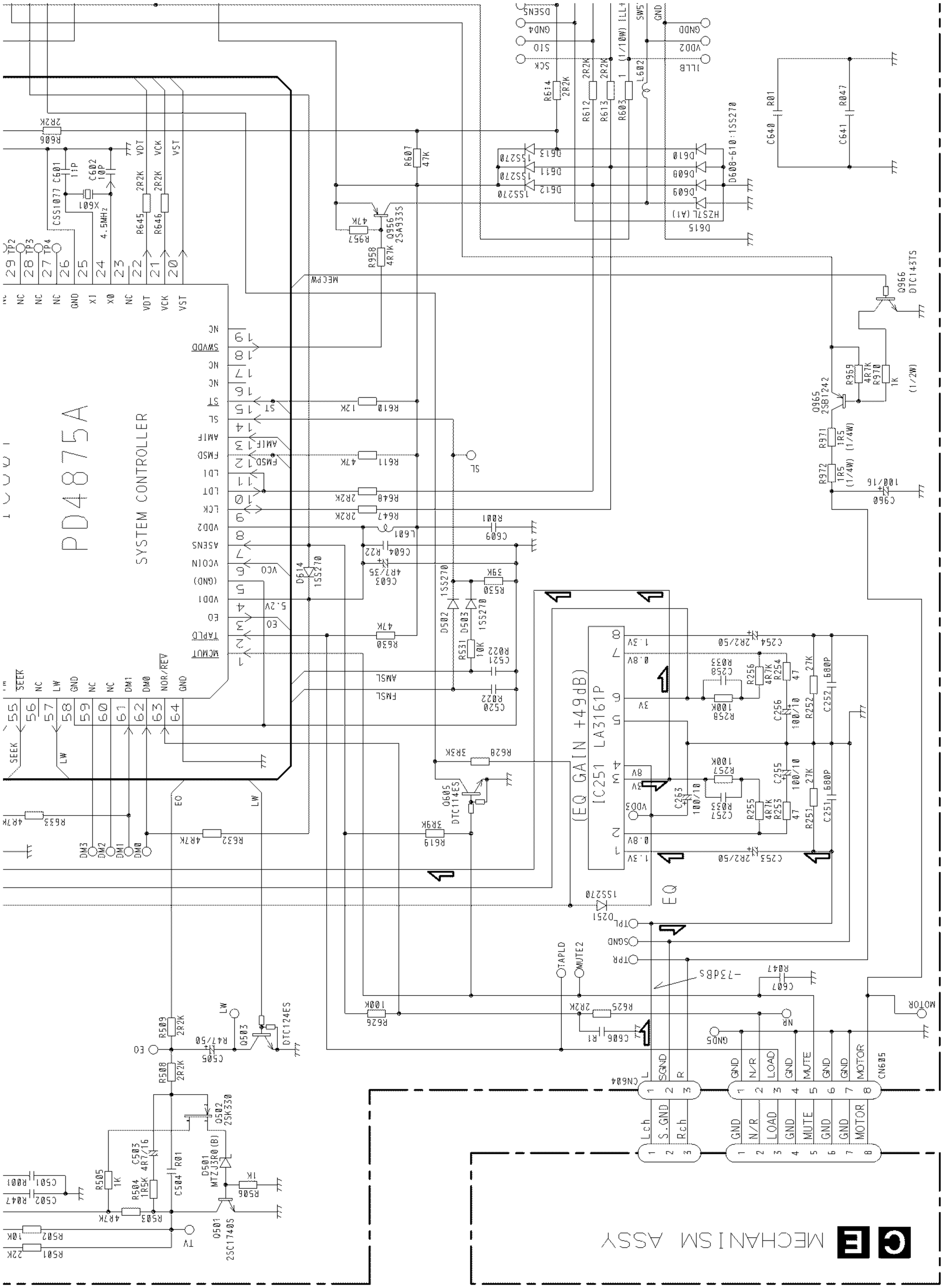
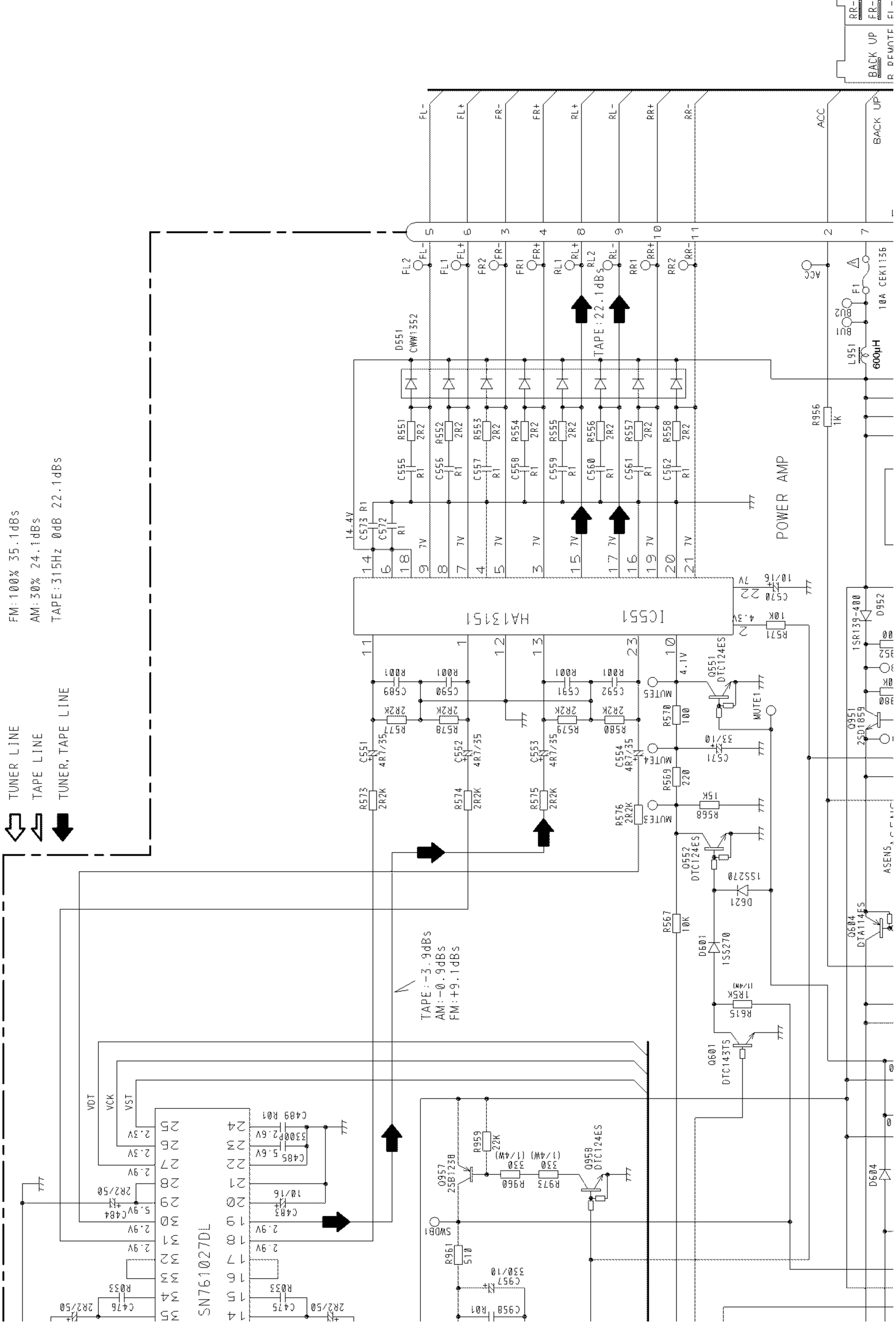



Fig. 5

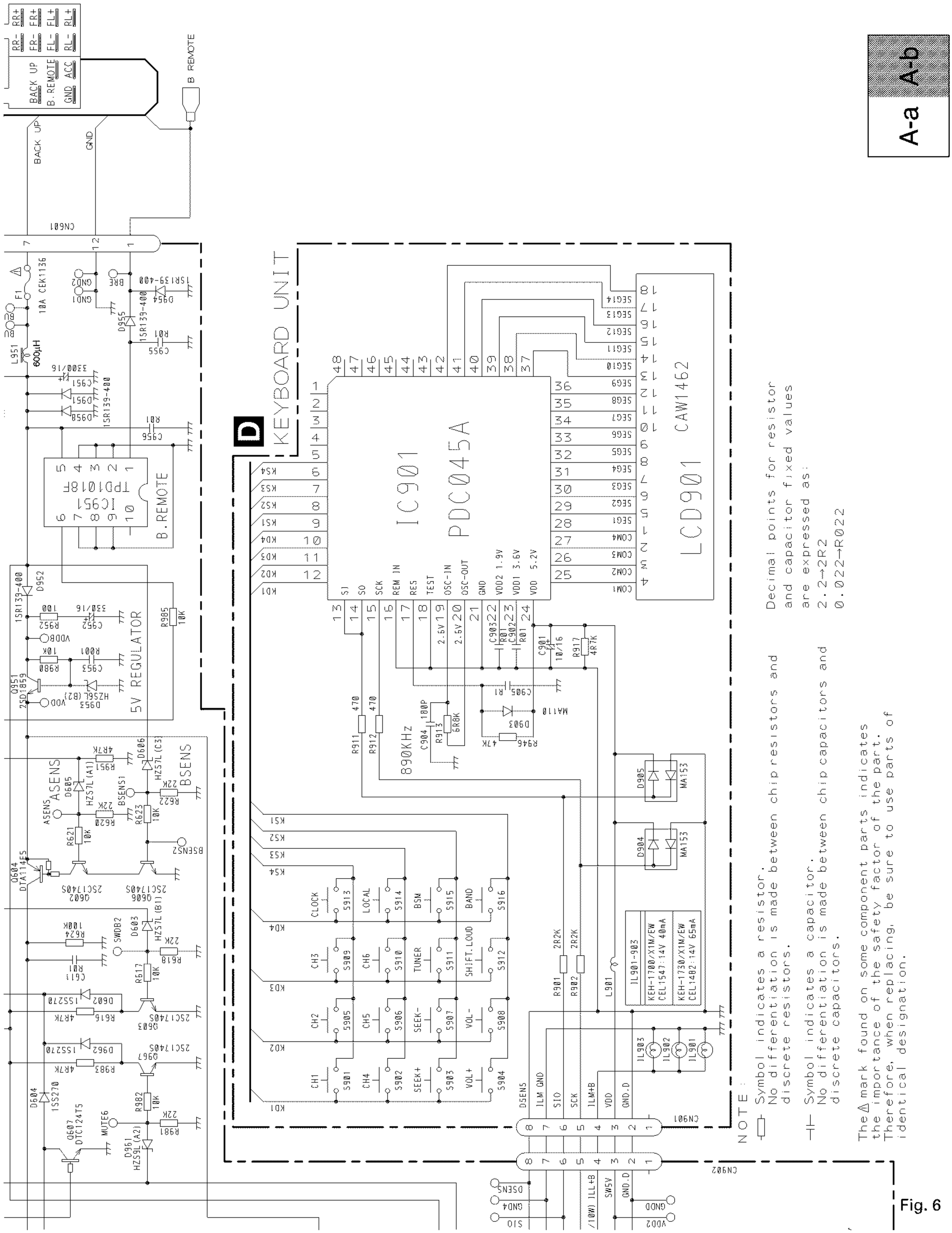
A-a A-b




TUNER LINE
TAPE LINE
TUNER, TAPE LINE

FM:100% 35.1dBs
AM:30% 24.1dBs
TAPE:315Hz 0dB 22.1dBs

A-a A-b

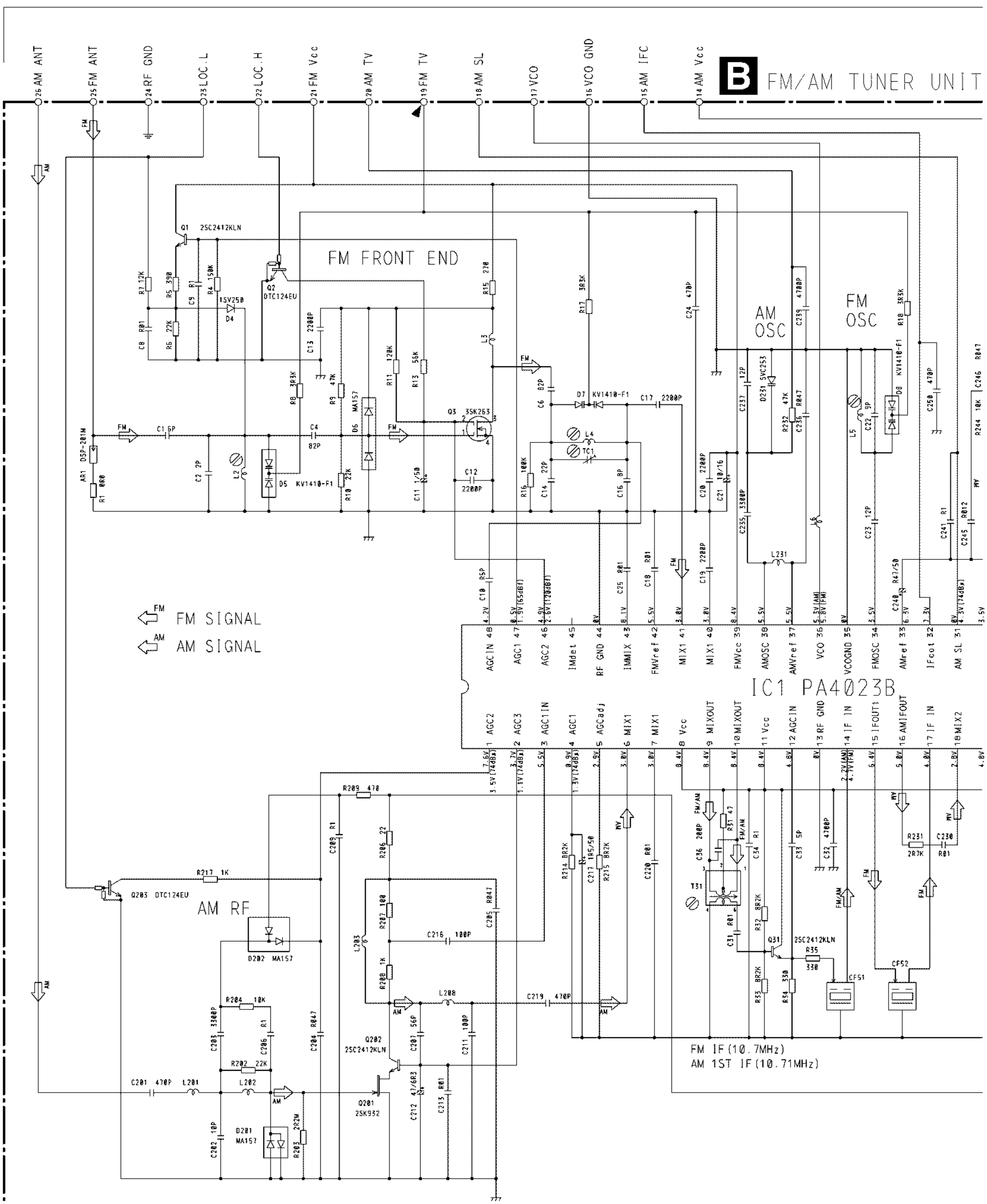



NOTE:
- Symbol indicates a resistor. Decimal points for resistor and capacitor fixed values are expressed as:
  2.2→2R2
  0.022→R022
- Symbol indicates a capacitor.
- The △ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

Fig. 6

# 3.2 FM/AM TUNER UNIT

## B FM/AM TUNER UNIT



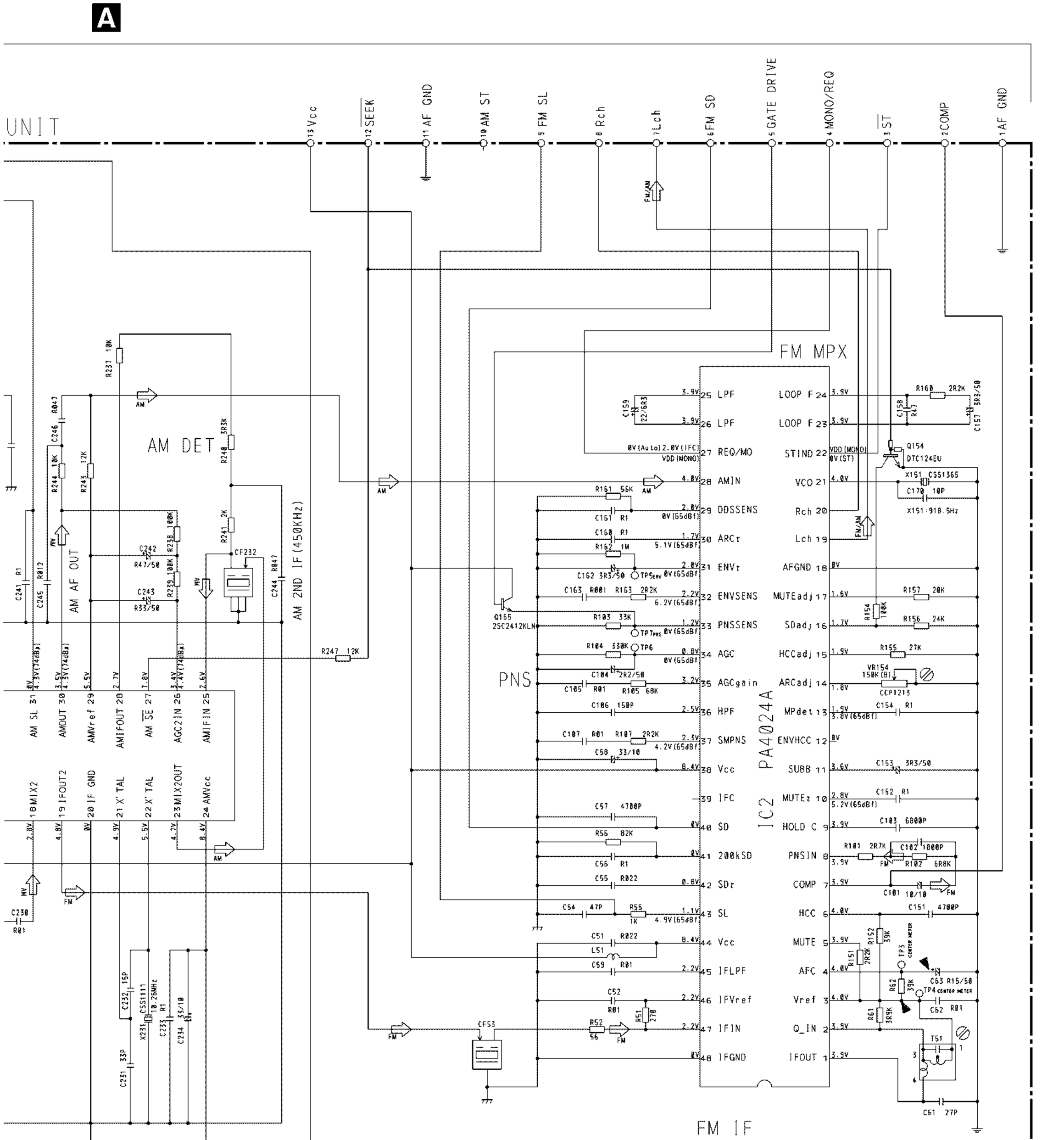
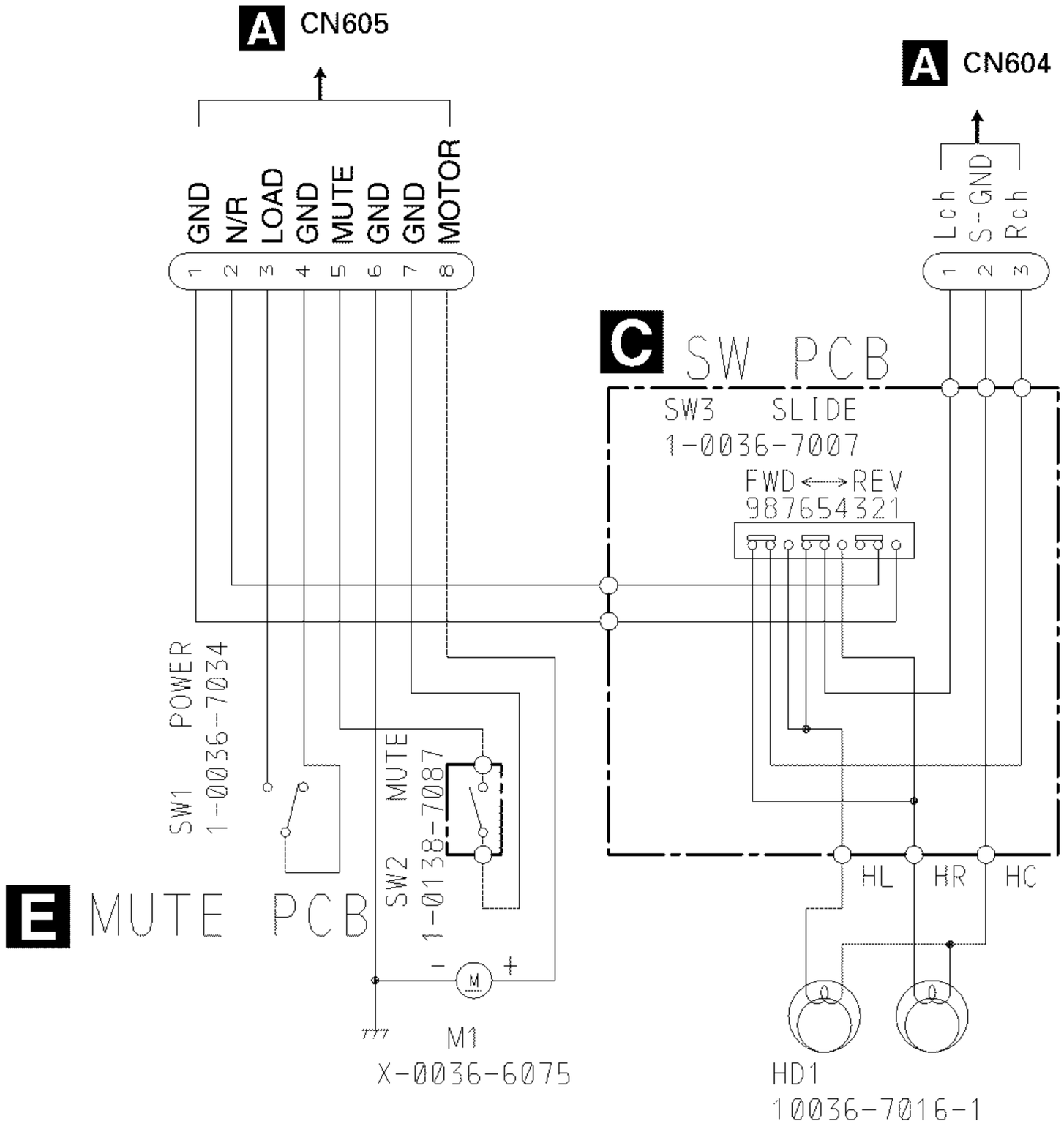

UNIT
AM DET
AM AF OUT
AM 2ND IF (450KHz)
FM MPX
PNS
IC2 PA4024A
FM IF
AM SL 31
AMOUT 30
AMVref 29
AMIFOUT 28
AM SE 27
AGC2IN 26
AMIFIN 25
18 MIX2
19 IFOUT2
20 IF GND
21 X'TAL
22 X'TAL
23 MIX2OUT
24 AMVcc
25 LPF
26 LPF
27 REQ/MO
28 AMIN
29 DOSSENS
30 ARCτ
31 ENVτ
32 ENVSENS
33 PNSSENS
34 AGC
35 AGCgain
36 HPF
37 SMPNS
38 Vcc
39 IFC
40 SD
41 200kSD
42 SDτ
43 SL
44 Vcc
45 IFLPF
46 IFVref
47 IFIN
48 IFGND
LOOP F 24
LOOP F 23
STIND 22
VCO 21
Rch 20
Lch 19
AFGND 18
MUTEadj 17
SDadj 16
HCCadj 15
ARCadj 14
MPdet 13
ENVHCC 12
SUBB 11
MUTEτ 10
HOLD C 9
PNSIN 8
COMP 7
HCC 6
MUTE 5
AFC 4
Vref 3
Q_IN 2
IFOUT 1
Q154 DTC124EU
X151 CSS1365
X151:918.5Hz
X231 CSS1117 10.25MHz
CF232
CF53
Q165 2SC2412KLN
T51
TP3 CENTER METER
TP4 CENTER METER
TP5ENV
TP6
TP7PNS
VR154 150K(B)
FM/AM
AM
FM
MW

Fig. 7

## 3.3 MECHANISM ASSY




SWITCHES:
MUTE PCB
SW2:MUTE SWITCH·····ON-OFF
MISCELLANEOUS
SW1:POWER SWITCH·····ON-OFF
The underlined indicates
the switch position.

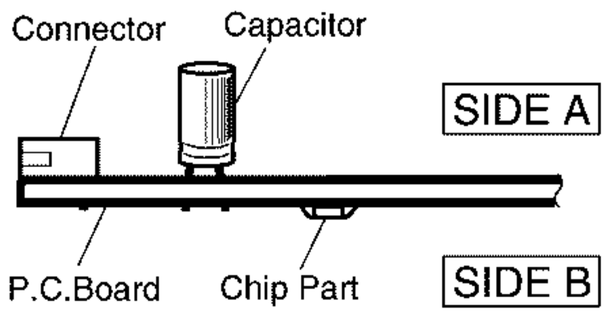
Fig. 8

# 4. PCB CONNECTION DIAGRAM

## 4.1 MECHANISM ASSY

### NOTE FOR PCB DIAGRAMS

1. The parts mounted on this PCB include all necessary parts for several destination.
   For further information for respective destinations, be sure to check with the schematic diagram.
2. Viewpoint of PCB diagrams



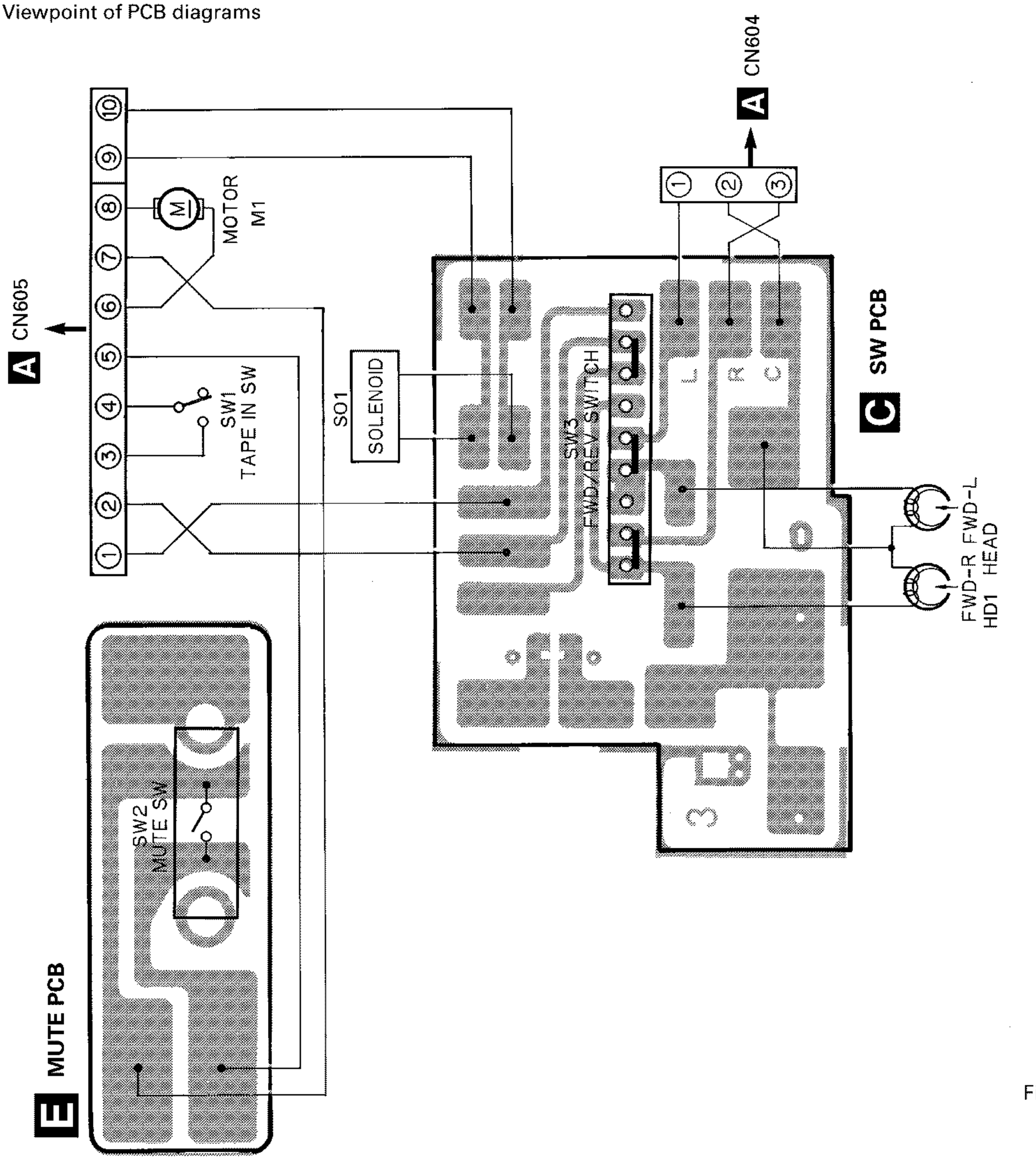
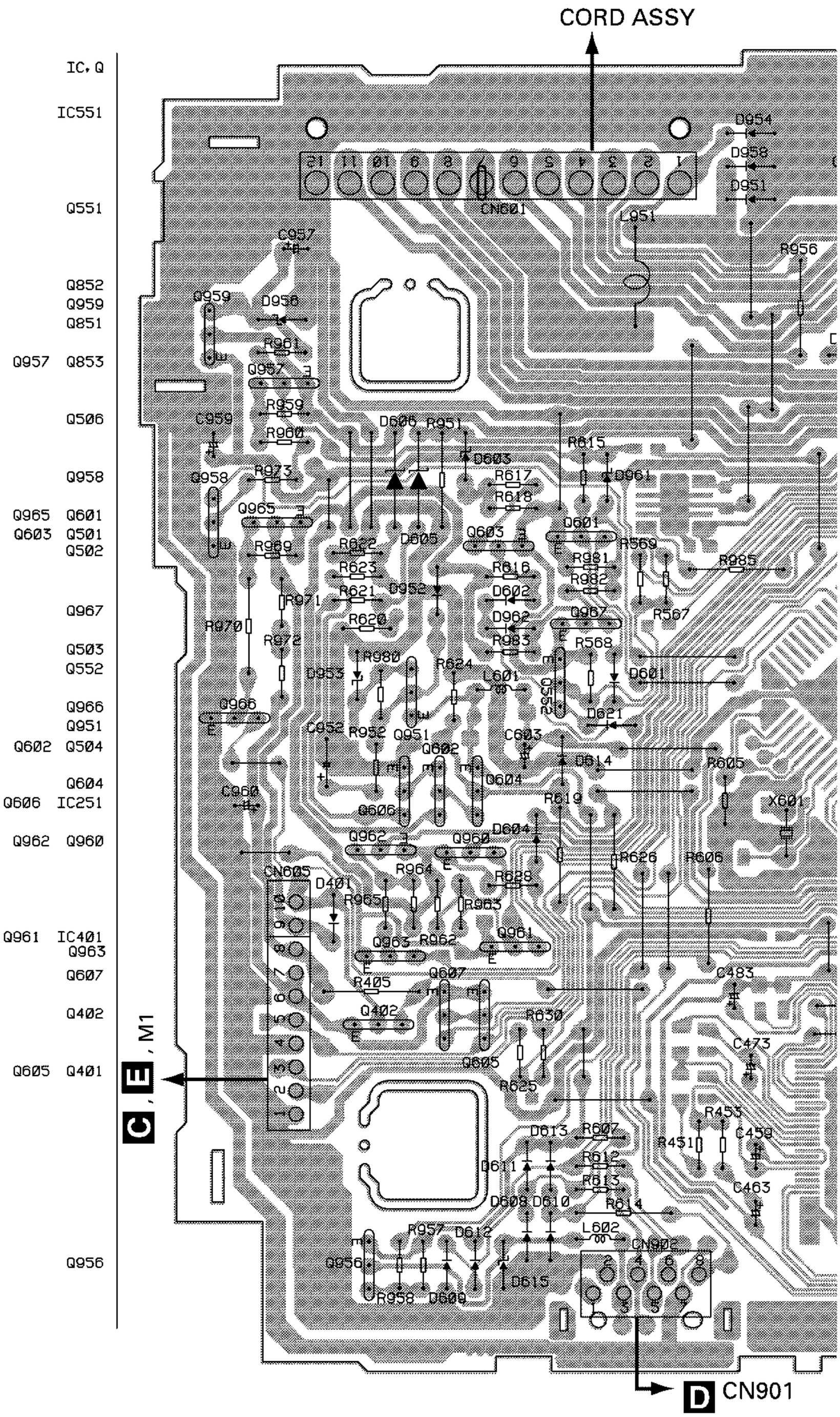




Fig. 9

# 4.2 TUNER AMP UNIT

## A TUNER AMP UNIT



SIDE A

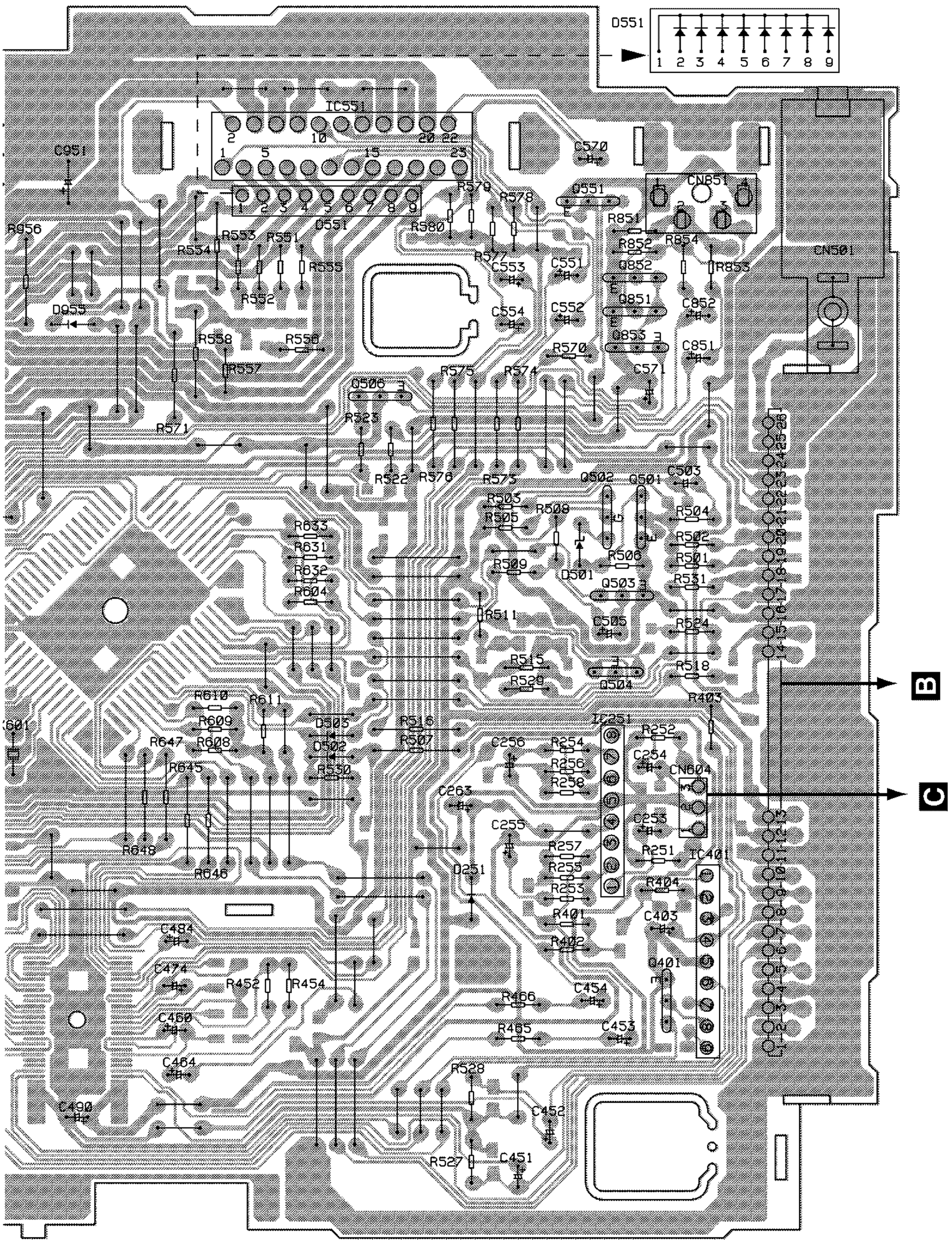
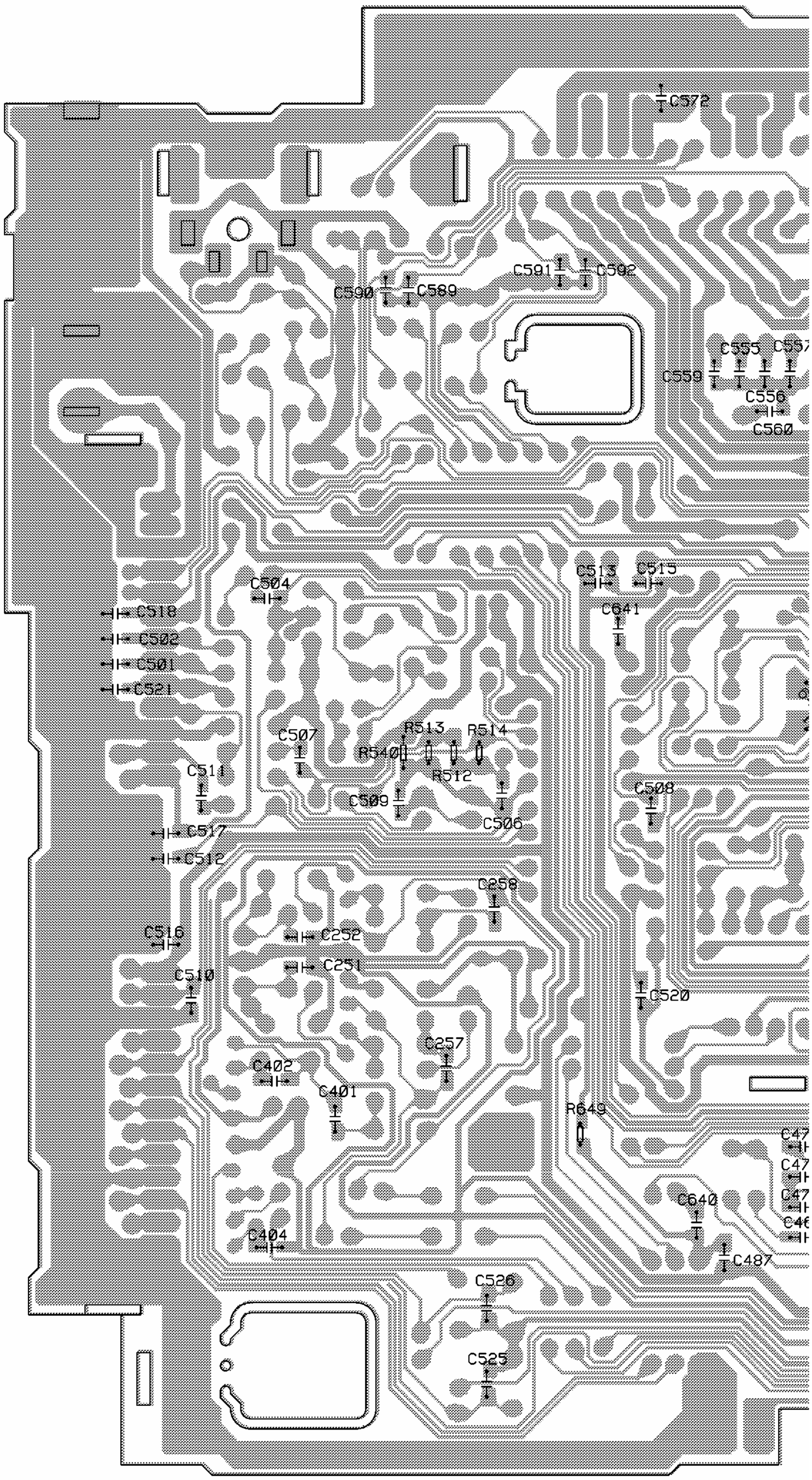
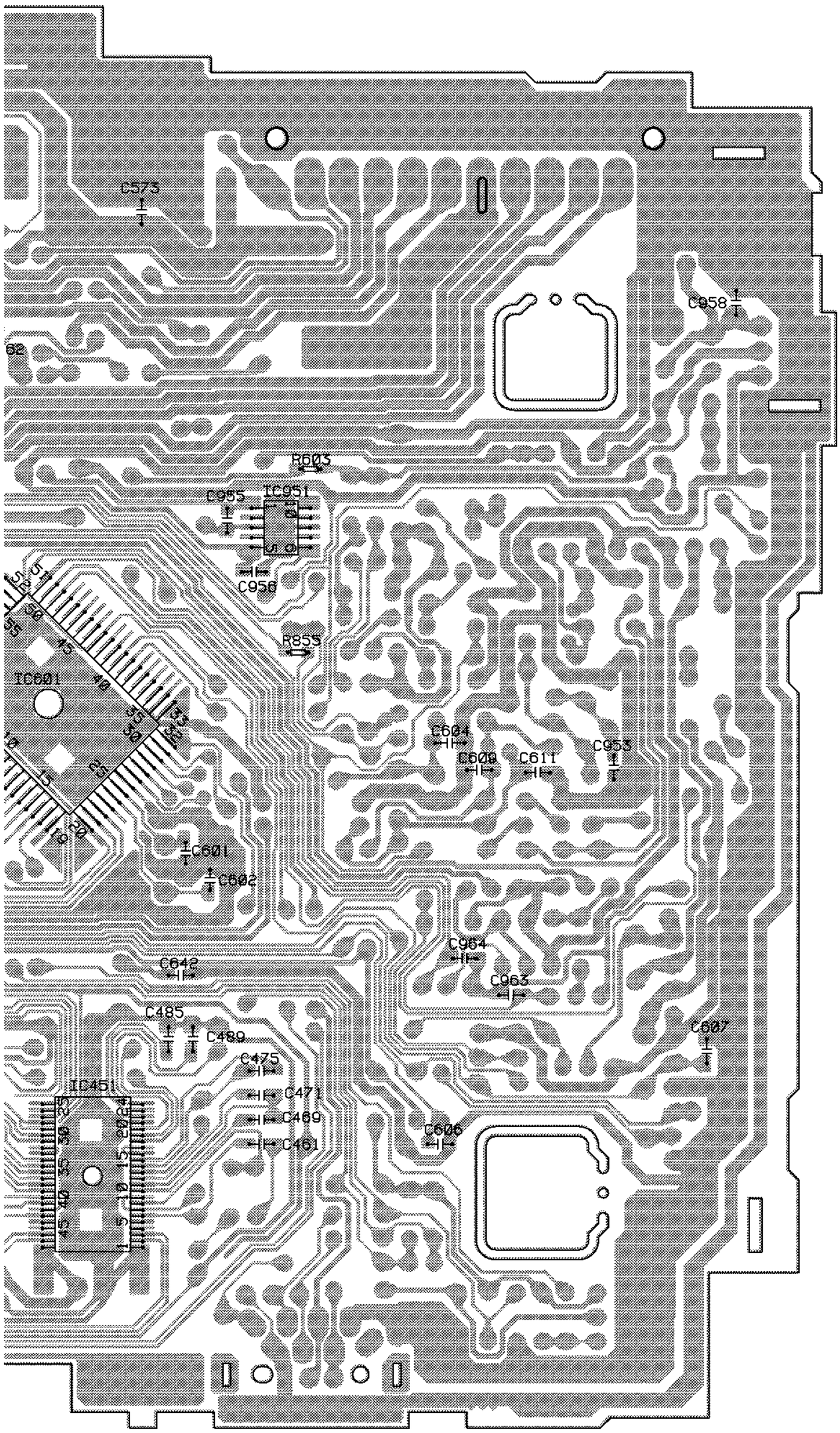



Fig. 10

# A TUNER AMP UNIT



SIDE B




IC, Q

IC951

IC601

IC451

Fig. 11

# 4.3 FM/AM TUNER UNIT

SIDE A

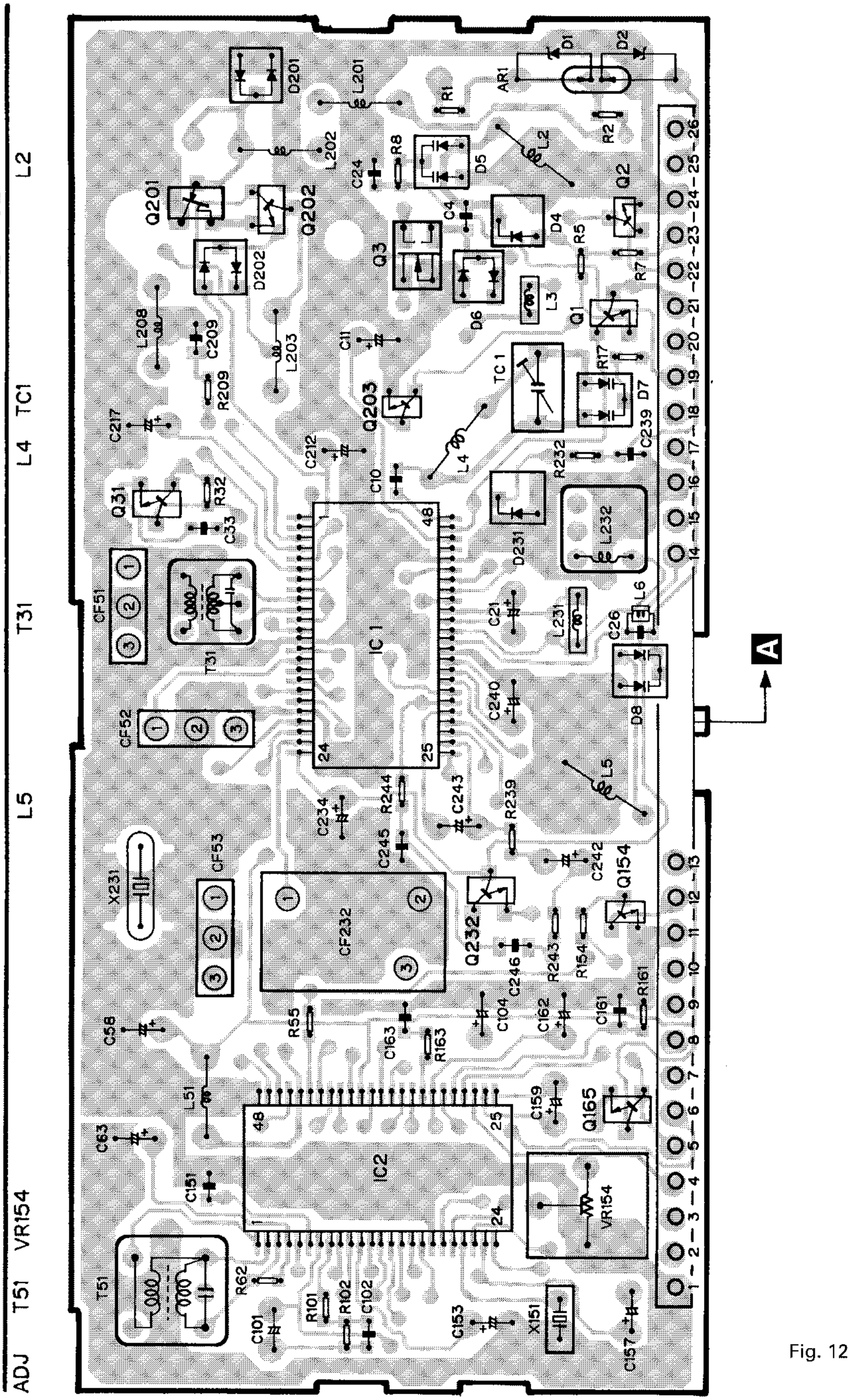
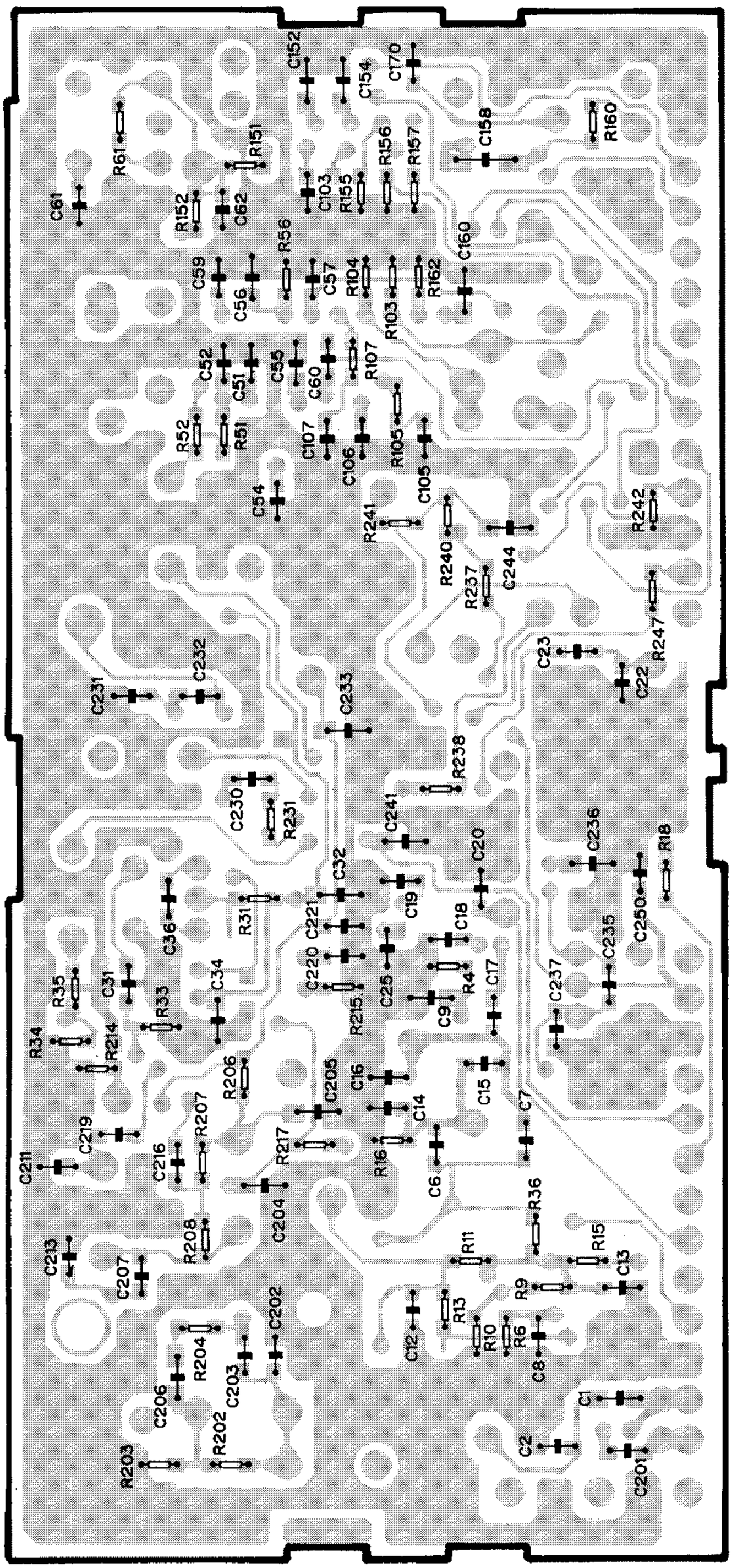



Fig. 12

SIDE B




B FM/AM TUNER UNIT

Fig. 13

# 4.4 KEYBOARD UNIT

SIDE A

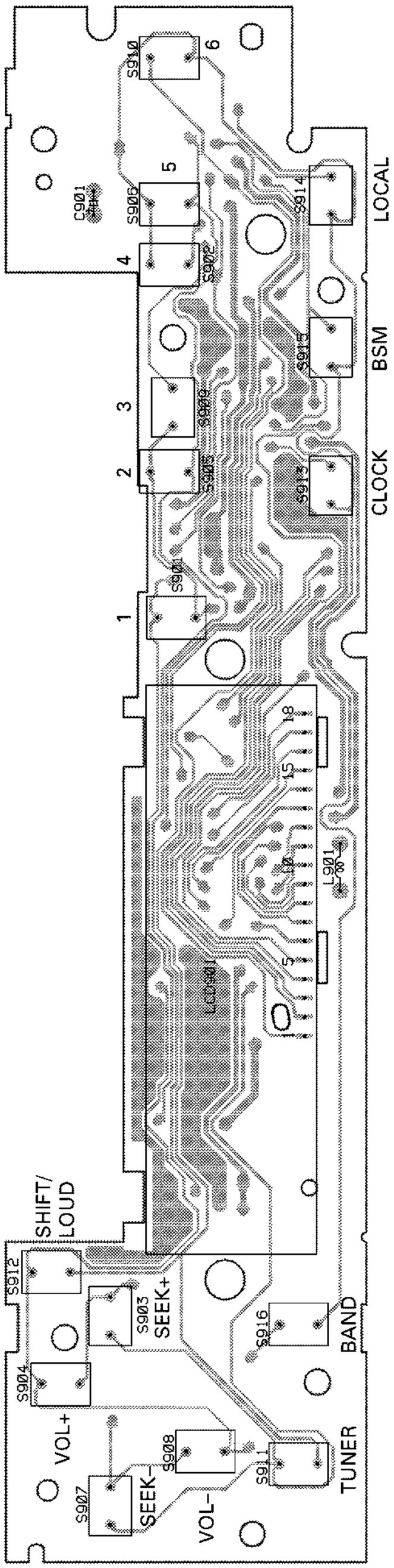



Fig. 14

SIDE B

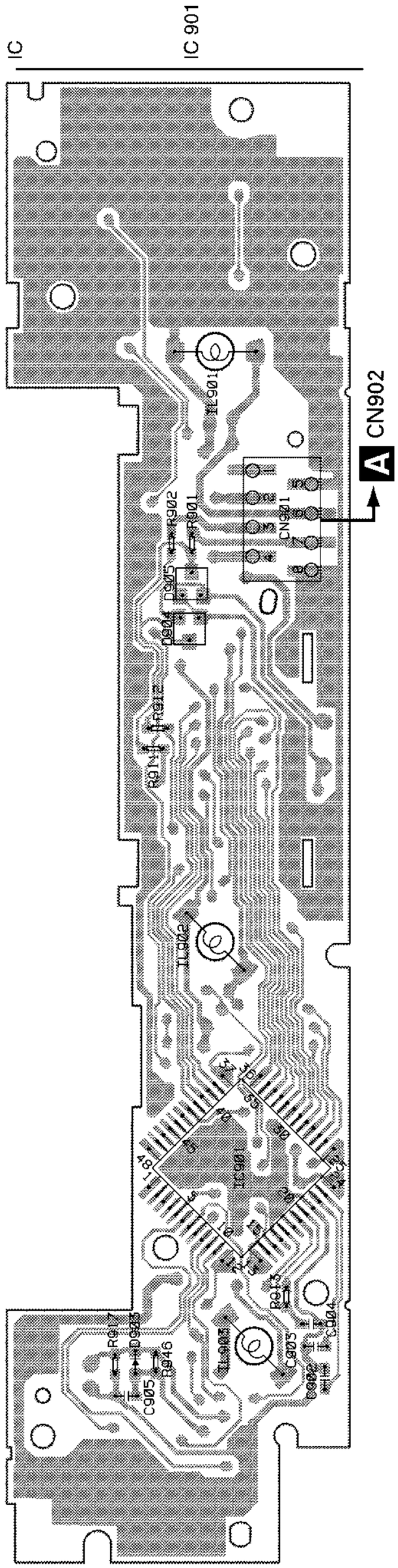



Fig. 15

# ELECTRICAL PARTS LIST

**NOTE:**

- Parts whose parts numbers are omitted are subject to being not supplied.
- The part numbers shown below indicate chip components.

  Chip Resistor

  RS1/○S○○○J,RS1/○○S○○○J

  Chip Capacitor (except for CQS.....)

  CKS....., CCS....., CSZS.....

**A** Unit Number : CWM5703
Unit Name : Tuner Amp Unit

MISCELLANEOUS

| =====Circuit Symbol and No. | | ===Part Name | Part No. |
|---|---|---|---|
| IC | 251 | IC | LA3161P |
| IC | 451 | IC | SN761027DL |
| IC | 551 | IC | HA13151 |
| IC | 601 | IC | PD4875A |
| IC | 951 | IC | TPD1018F |
| Q | 501 | Transistor | 2SC1740S |
| Q | 502 | Transistor | 2SK330 |
| Q | 503 | Transistor | DTC124ES |
| Q | 506 | Transistor | 2SC1740S |
| Q | 551 | Transistor | DTC124ES |
| Q | 552 | Transistor | DTC124ES |
| Q | 601 | Transistor | DTC143TS |
| Q | 602 | Transistor | 2SC1740S |
| Q | 603 | Transistor | 2SC1740S |
| Q | 604 | Transistor | DTA114ES |
| Q | 605 | Transistor | DTC114ES |
| Q | 606 | Transistor | 2SC1740S |
| Q | 607 | Transistor | DTC124TS |
| Q | 951 | Transistor | 2SD1859 |
| Q | 956 | Transistor | 2SA933S |
| Q | 957 | Transistor | 2SB1238 |
| Q | 958 | Transistor | DTC124ES |
| Q | 959 | Transistor | 2SD2395 |
| Q | 960 | Transistor | 2SA933S |
| Q | 961 | Transistor | DTC114ES |
| Q | 962 | Transistor | 2SA933S |
| Q | 963 | Transistor | DTC114ES |
| Q | 965 | Transistor | 2SB1242 |
| Q | 966 | Transistor | DTC143TS |
| Q | 967 | Transistor | 2SC1740S |
| D | 251 | Diode | 1SS270 |
| D | 501 | Diode | MTZJ3R0(B) |
| D | 502 | Diode | 1SS270 |
| D | 503 | Diode | 1SS270 |
| D | 551 | Diode | CWW1352 |
| D | 601 | Diode | 1SS270 |
| D | 602 | Diode | 1SS270 |
| D | 603 | Diode | HZS7L(B1) |
| D | 604 | Diode | 1SS270 |
| D | 605 | Diode | HZS7L(A1) |
| D | 606 | Diode | HZS7L(C3) |
| D | 608 | Diode | 1SS270 |
| D | 609 | Diode | 1SS270 |
| D | 610 | Diode | 1SS270 |
| D | 611 | Diode | 1SS270 |
| D | 612 | Diode | 1SS270 |
| D | 613 | Diode | 1SS270 |
| D | 614 | Diode | 1SS270 |
| D | 615 | Diode | HZS7L(A1) |
| D | 621 | Diode | 1SS270 |

| =====Circuit Symbol and No. | | ===Part Name | Part No. |
|---|---|---|---|
| D | 951 | Diode | 1SR139-400 |
| D | 952 | Diode | 1SR139-400 |
| D | 953 | Diode | HZS6L(B2) |
| D | 954 | Diode | 1SR139-400 |
| D | 955 | Diode | 1SR139-400 |
| D | 956 | Diode | HZS9L(B3) |
| D | 958 | Diode | 1SR139-400 |
| D | 961 | Diode | HZS9L(A2) |
| D | 962 | Diode | 1SS270 |
| L | 601 | Ferri-Inductor | LAU2R2K |
| L | 602 | Ferri-Inductor | LAU2R2K |
| L | 951 | Choke Coil 600µH | CTH1168 |
| X | 601 | Crystal Resonator 4.500MHz | CSS1077 |
| | | FM/AM Tuner Unit | CWE1466 |

RESISTORS

| | | | |
|---|---|---|---|
| R | 251 | | RD1/4PU273J |
| R | 252 | | RD1/4PU273J |
| R | 253 | | RD1/4PU470J |
| R | 254 | | RD1/4PU470J |
| R | 255 | | RD1/4PU472J |
| R | 256 | | RD1/4PU472J |
| R | 257 | | RD1/4PU104J |
| R | 258 | | RD1/4PU104J |
| R | 451 | | RD1/4PU272J |
| R | 452 | | RD1/4PU272J |
| R | 453 | | RD1/4PU151J |
| R | 454 | | RD1/4PU151J |
| R | 465 | | RD1/4PU333J |
| R | 466 | | RD1/4PU333J |
| R | 501 | | RD1/4PU223J |
| R | 502 | | RD1/4PU103J |
| R | 503 | | RD1/4PU472J |
| R | 504 | | RD1/4PU152J |
| R | 505 | | RD1/4PU102J |
| R | 506 | | RD1/4PU102J |
| R | 507 | | RD1/4PU102J |
| R | 508 | | RD1/4PU222J |
| R | 509 | | RD1/4PU222J |
| R | 516 | | RD1/4PU102J |
| R | 518 | | RD1/4PU102J |
| R | 522 | | RD1/4PU222J |
| R | 523 | | RD1/4PU222J |
| R | 527 | | RD1/4PU272J |
| R | 528 | | RD1/4PU272J |
| R | 530 | | RD1/4PU393J |
| R | 531 | | RD1/4PU103J |
| R | 551 | | RD1/4PU2R2J |
| R | 552 | | RD1/4PU2R2J |
| R | 553 | | RD1/4PU2R2J |
| R | 554 | | RD1/4PU2R2J |
| R | 555 | | RD1/4PU2R2J |
| R | 556 | | RD1/4PU2R2J |
| R | 557 | | RD1/4PU2R2J |
| R | 558 | | RD1/4PU2R2J |
| R | 567 | | RD1/4PU103J |

| Circuit Symbol and No. | | Part Name | Part No. |
|---|---|---|---|
| R | 568 | | RD1/4PU153J |
| R | 569 | | RD1/4PU221J |
| R | 570 | | RD1/4PU101J |
| R | 571 | | RD1/4PU103J |
| R | 573 | | RD1/4PU222J |
| R | 574 | | RD1/4PU222J |
| R | 575 | | RD1/4PU222J |
| R | 576 | | RD1/4PU222J |
| R | 577 | | RD1/4PU222J |
| R | 578 | | RD1/4PU222J |
| R | 579 | | RD1/4PU222J |
| R | 580 | | RD1/4PU222J |
| R | 603 | | RS1/10S1R0J |
| R | 605 | | RD1/4PU473J |
| R | 606 | | RD1/4PU222J |
| R | 607 | | RD1/4PU473J |
| R | 610 | | RD1/4PU123J |
| R | 611 | | RD1/4PU473J |
| R | 612 | | RD1/4PU222J |
| R | 613 | | RD1/4PU222J |
| R | 614 | | RD1/4PU222J |
| R | 615 | | RD1/4PU152J |
| R | 616 | | RD1/4PU472J |
| R | 617 | | RD1/4PU103J |
| R | 618 | | RD1/4PU223J |
| R | 619 | | RD1/4PU392J |
| R | 620 | | RD1/4PU223J |
| R | 621 | | RD1/4PU103J |
| R | 622 | | RD1/4PU223J |
| R | 623 | | RD1/4PU103J |
| R | 624 | | RD1/4PU104J |
| R | 625 | | RD1/4PU222J |
| R | 626 | | RD1/4PU104J |
| R | 628 | | RD1/4PU332J |
| R | 630 | | RD1/4PU473J |
| R | 632 | | RD1/4PU472J |
| R | 633 | | RD1/4PU472J |
| R | 645 | | RD1/4PU222J |
| R | 646 | | RD1/4PU222J |
| R | 647 | | RD1/4PU222J |
| R | 648 | | RD1/4PU222J |
| R | 951 | | RD1/4PU472J |
| R | 952 | | RD1/4PU101J |
| R | 956 | | RD1/4PU102J |
| R | 957 | | RD1/4PU473J |
| R | 958 | | RD1/4PU472J |
| R | 959 | | RD1/4PU223J |
| R | 960 | | RD1/4PU331J |
| R | 961 | | RD1/4PU511J |
| R | 962 | | RD1/4PU472J |
| R | 963 | | RD1/4PU102J |
| R | 964 | | RD1/4PU472J |
| R | 965 | | RD1/4PU102J |
| R | 969 | | RD1/4PU472J |
| R | 970 | | RD1/4PU102J |
| R | 971 | | RD1/4PU1R5J |
| R | 972 | | RD1/4PU1R5J |
| R | 973 | | RD1/4PU331J |
| R | 980 | | RD1/4PU103J |
| R | 981 | | RD1/4PU223J |
| R | 982 | | RD1/4PU103J |
| R | 983 | | RD1/4PU472J |
| R | 985 | | RD1/4PU103J |

CAPACITORS

| Circuit Symbol and No. | | Part Name | Part No. |
|---|---|---|---|
| C | 251 | | CKSQYB681K50 |
| C | 252 | | CKSQYB681K50 |
| C | 253 | | CEJA2R2M50 |
| C | 254 | | CEJA2R2M50 |
| C | 255 | | CEAL101M10 |
| C | 256 | | CEAL101M10 |
| C | 257 | | CKSQYB333K25 |
| C | 258 | | CKSQYB333K25 |
| C | 263 | | CEAL101M10 |
| C | 451 | | CEAL1R0M50 |
| C | 452 | | CEAL1R0M50 |
| C | 453 | | CEAL1R0M50 |
| C | 454 | | CEAL1R0M50 |
| C | 459 | | CEAL100M16 |
| C | 460 | | CEAL100M16 |
| C | 461 | | CKSQYB822K50 |
| C | 462 | | CKSQYB822K50 |
| C | 463 | | CEAL1R0M50 |
| C | 464 | | CEAL1R0M50 |
| C | 469 | | CKSQYB183K25 |
| C | 470 | | CKSQYB183K25 |
| C | 471 | | CKSQYB102K50 |
| C | 472 | | CKSQYB102K50 |
| C | 473 | | CEAL2R2M50 |
| C | 474 | | CEAL2R2M50 |
| C | 475 | | CKSQYB333K25 |
| C | 476 | | CKSQYB333K25 |
| C | 483 | | CEAL100M16 |
| C | 484 | | CEAL2R2M50 |
| C | 485 | | CKSQYB332K50 |
| C | 487 | | CKSQYB104K16 |
| C | 489 | | CKSQYB103K25 |
| C | 490 | | CEAL470M16 |
| C | 501 | | CKSQYB102K50 |
| C | 502 | | CKSQYB473K16 |
| C | 503 | 4.7µF/16V | CCH1250 |
| C | 504 | | CKSQYB103K25 |
| C | 505 | | CEJAR47M50 |
| C | 508 | | CCSQCH101J50 |
| C | 510 | | CKSQYB102K50 |
| C | 511 | | CKSQYB103K25 |
| C | 512 | | CCSQCH101J50 |
| C | 513 | | CKSQYB223K25 |
| C | 515 | | CKSQYB223K25 |
| C | 516 | | CKSQYB473K16 |
| C | 517 | | CKSQYB104K16 |
| C | 518 | | CKSQYB104K16 |
| C | 520 | | CKSQYB223K25 |
| C | 521 | | CKSQYB223K25 |
| C | 525 | | CKSQYB223K25 |
| C | 526 | | CKSQYB223K25 |
| C | 551 | | CEJA4R7M35 |
| C | 552 | | CEJA4R7M35 |
| C | 553 | | CEJA4R7M35 |
| C | 554 | | CEJA4R7M35 |
| C | 555 | | CKSQYB104K16 |
| C | 556 | | CKSQYB104K16 |
| C | 557 | | CKSQYB104K16 |
| C | 558 | | CKSQYB104K16 |
| C | 559 | | CKSQYB104K16 |
| C | 560 | | CKSQYB104K16 |
| C | 561 | | CKSQYB104K16 |
| C | 562 | | CKSQYB104K16 |
| C | 570 | | CEAS100M16 |
| C | 571 | | CEAS330M10 |

| =====Circuit Symbol and No. | === | Part Name | Part No. |
|---|---|---|---|
| C | 572 | | CKSQYB104K25 |
| C | 573 | | CKSQYB104K25 |
| C | 589 | | CKSQYB102K50 |
| C | 590 | | CKSQYB102K50 |
| C | 591 | | CKSQYB102K50 |
| C | 592 | | CKSQYB102K50 |
| C | 601 | | CCSQCH110J50 |
| C | 602 | | CCSQCH100D50 |
| C | 603 | | CEJA4R7M35 |
| C | 604 | | CKSYB224K16 |
| C | 606 | | CKSQYB104K16 |
| C | 607 | | CKSQYB473K16 |
| C | 609 | | CKSQYB102K50 |
| C | 611 | | CKSQYB103K25 |
| C | 640 | | CKSQYB103K25 |
| C | 641 | | CKSQYB473K16 |
| C | 951 | 3300µF/16V | CCH1018 |
| C | 952 | | CEAS331M16 |
| C | 953 | | CKSQYB102K50 |
| C | 955 | | CKSQYB103K50 |
| C | 956 | | CKSQYB103K50 |
| C | 957 | 330µF/10V | CCH1181 |
| C | 958 | | CKSQYB103K25 |
| C | 959 | 330µF/10V | CCH1181 |
| C | 960 | | CEAS101M16 |
| C | 963 | | CCSQCH101J50 |
| C | 964 | | CCSQCH101J50 |

**D** Unit Number : CWM5710(KEH-1700/X1M/EW)
: CWM5711(KEH-1730/X1M/EW)
Unit Name : Keyboard Unit

MISCELLANEOUS

| | | | |
|---|---|---|---|
| D | 903 | Diode | MA110 |
| D | 904 | Diode | MA153 |
| D | 905 | Diode | MA153 |
| IC | 901 | IC | PDC045A |
| L | 901 | Inductor | LAU150K |
| IL | 901 | Lamp 14V 40mA(KEH-1700/X1M/EW) | CEL1547 |
| IL | 901 | Lamp 14V 65mA(KEH-1730/X1M/EW) | CEL1482 |
| IL | 902 | Lamp 14V 40mA(KEH-1700/X1M/EW) | CEL1547 |
| IL | 902 | Lamp 14V 65mA(KEH-1730/X1M/EW) | CEL1482 |
| IL | 903 | Lamp 14V 40mA(KEH-1700/X1M/EW) | CEL1547 |
| IL | 903 | Lamp 14V 65mA(KEH-1730/X1M/EW) | CEL1482 |
| LCD | 901 | LCD | CAW1462 |

RESISTORS

| | | | |
|---|---|---|---|
| R | 901 | | RS1/10S222J |
| R | 902 | | RS1/10S222J |
| R | 911 | | RS1/10S471J |
| R | 912 | | RS1/10S471J |
| R | 913 | | RS1/10S682J |
| R | 917 | | RS1/10S472J |
| R | 946 | | RS1/10S473J |

CAPACITORS

| | | | |
|---|---|---|---|
| C | 901 | | CEAL100M16 |
| C | 902 | | CKSQYB103K25 |
| C | 903 | | CKSQYB103K25 |
| C | 904 | | CCSQCH181J50 |
| C | 905 | | CKSQYB104K16 |

| =====Circuit Symbol and No. | === | Part Name | Part No. |
|---|---|---|---|

**B** Unit Number : CWE1466
Unit Name : FM/AM Tuner Unit

MISCELLANEOUS

| | | | |
|---|---|---|---|
| IC | 1 | IC | PA4023B |
| IC | 2 | IC | PA4024A |
| Q | 1 | Transistor | 2SC2412KLN |
| Q | 2 | Transistor | DTC124EU |
| Q | 3 | FET | 3SK263 |
| Q | 31 | Transistor | 2SC2412KLN |
| Q | 154 | Transistor | DTC124EU |
| Q | 165 | Transistor | 2SC2412KLN |
| Q | 201 | FET | 2SK932 |
| Q | 202 | Transistor | 2SC2412KLN |
| Q | 203 | Transistor | DTC124EU |
| D | 4 | Diode | 1SV250 |
| D | 5 | Diode | KV1410-F1 |
| D | 6 | Diode | MA157 |
| D | 7 | Diode | KV1410-F1 |
| D | 8 | Diode | KV1410-F1 |
| D | 201 | Diode | MA157 |
| D | 202 | Diode | MA157 |
| D | 231 | Diode | SVC253 |
| L | 2 | Coil | CTC1133 |
| L | 3 | Inductor | LCTB2R2K2125 |
| L | 4 | Coil | CTC1133 |
| L | 5 | Coil | CTC1132 |
| L | 6 | Inductor | LCTBR15K1608 |
| L | 51 | Ferri-Inductor | LAU150K |
| L | 201 | Ferri-Inductor | LAU4R7K |
| L | 202 | Ferri-Inductor | LAU330K |
| L | 203 | Inductor | CTF1287 |
| L | 208 | Inductor | LAU121K |
| L | 231 | Inductor | LCTA3R3J3225 |
| T | 31 | Coil | CTE1116 |
| T | 51 | Coil | CTC1136 |
| TC | 1 | Capacitor | CCL1038 |
| CF | 51 | Ceramic Filter | CTF1292 |
| CF | 52 | Ceramic Filter | CTF1292 |
| CF | 53 | Ceramic Filter | CTF1292 |
| CF | 232 | Ceramic Filter | CTF1348 |
| X | 151 | Resonator 920.5kHz | CSS1365 |
| X | 231 | Crystal Resonator 10.26MHz | CSS1111 |
| VR | 154 | Semi-fixed 150kΩ(B) | CCP1213 |
| AR | 1 | Capacitor with Discharge Gap | DSP-201M |

RESISTORS

| | | | |
|---|---|---|---|
| R | 1 | | RS1/16S0R0J |
| R | 4 | | RS1/16S154J |
| R | 5 | | RS1/16S391J |
| R | 6 | | RS1/16S223J |
| R | 7 | | RS1/16S123J |
| R | 8 | | RS1/16S332J |
| R | 9 | | RS1/16S473J |
| R | 10 | | RS1/16S223J |
| R | 11 | | RS1/16S124J |
| R | 13 | | RS1/16S563J |
| R | 15 | | RS1/16S271J |
| R | 16 | | RS1/16S104J |
| R | 17 | | RS1/16S332J |
| R | 18 | | RS1/16S332J |
| R | 31 | | RS1/16S470J |
| R | 32 | | RS1/16S822J |
| R | 33 | | RS1/16S822J |
| R | 34 | | RS1/16S331J |
| R | 35 | | RS1/16S331J |
| R | 51 | | RS1/16S271J |

| =====Circuit Symbol and No. | ===Part Name | Part No. |
|---|---|---|
| R | 52 | RS1/16S560J |
| R | 55 | RS1/16S102J |
| R | 56 | RS1/16S823J |
| R | 61 | RS1/16S392J |
| R | 62 | RS1/16S393J |
| R | 101 | RS1/16S272J |
| R | 102 | RS1/16S682J |
| R | 103 | RS1/16S333J |
| R | 104 | RS1/16S334J |
| R | 105 | RS1/16S683J |
| R | 107 | RS1/16S222J |
| R | 151 | RS1/16S222J |
| R | 152 | RS1/16S393J |
| R | 154 | RS1/16S104J |
| R | 155 | RS1/16S273J |
| R | 156 | RS1/16S243J |
| R | 157 | RS1/16S203J |
| R | 160 | RS1/16S222J |
| R | 161 | RS1/16S563J |
| R | 162 | RS1/16S105J |
| R | 163 | RS1/16S222J |
| R | 202 | RS1/16S223J |
| R | 203 | RS1/16S225J |
| R | 204 | RS1/16S103J |
| R | 206 | RS1/16S220J |
| R | 207 | RS1/16S101J |
| R | 208 | RS1/16S102J |
| R | 209 | RS1/16S471J |
| R | 214 | RS1/16S822J |
| R | 215 | RS1/16S822J |
| R | 217 | RS1/16S102J |
| R | 231 | RS1/16S272J |
| R | 232 | RS1/16S473J |
| R | 237 | RS1/16S103J |
| R | 238 | RS1/16S104J |
| R | 239 | RS1/16S104J |
| R | 240 | RS1/16S332J |
| R | 241 | RS1/16S202J |
| R | 243 | RS1/16S123J |
| R | 244 | RS1/16S103J |
| R | 247 | RS1/16S123J |
| CAPACITORS | | |
| C | 1 | CCSQCH6R0D50 |
| C | 2 | CCSRCK2R0C50 |
| C | 4 | CCSRCH820J50 |
| C | 6 | CCSRCH820J50 |
| C | 8 | CKSRYB103K25 |
| C | 9 | CKSQYB104K16 |
| C | 10 | CCSRCKR50C50 |
| C | 11 | CEJA1R0M50 |
| C | 12 | CKSRYB222K50 |
| C | 13 | CKSRYB222K50 |
| C | 14 | CCSRCH220J50 |
| C | 16 | CCSRCH8R0D50 |
| C | 17 | CKSRYB222K50 |
| C | 18 | CKSRYB103K25 |
| C | 19 | CKSRYB222K50 |
| C | 20 | CKSRYB222K50 |
| C | 21 | CEJA100M16 |
| C | 22 | CCSRTH9R0D50 |
| C | 23 | CCSRTH120J50 |
| C | 24 | CCSRCH471J50 |
| C | 25 | CKSRYB103K25 |
| C | 31 | CKSRYB103K25 |
| C | 32 | CKSQYB472K50 |
| C | 33 | CCSRCH5R0C50 |
| C | 34 | CKSQYB104K16 |

| =====Circuit Symbol and No. | ===Part Name | Part No. |
|---|---|---|
| C | 36 | CCSRRH201J50 |
| C | 51 | CKSRYB223K25 |
| C | 52 | CKSRYB103K25 |
| C | 54 | CCSRCH470J50 |
| C | 55 | CKSQYB223K25 |
| C | 56 | CKSQYB104K16 |
| C | 57 | CKSRYB472K50 |
| C | 58 | CEJA330M10 |
| C | 59 | CKSRYB103K25 |
| C | 61 | CCSRCH270J50 |
| C | 62 | CKSRYB103K25 |
| C | 63 | CEJAR15M50 |
| C | 101 | CEJANP100M10 |
| C | 102 | CKSRYB182K50 |
| C | 103 | CKSRYB682K25 |
| C | 104 | CEJA2R2M50 |
| C | 105 | CKSRYB103K25 |
| C | 106 | CCSRCH151J50 |
| C | 107 | CKSRYB103K25 |
| C | 151 | CKSRYB472K50 |
| C | 152 | CKSQYB104K16 |
| C | 153 | CEJA3R3M50 |
| C | 154 | CKSQYB104K16 |
| C | 157 | CEJA3R3M50 |
| C | 158 | CKSYB474K16 |
| C | 159 | CEJA220M6R3 |
| C | 160 | CKSQYB104K16 |
| C | 161 | CKSQYB104K16 |
| C | 162 | CEJA3R3M50 |
| C | 163 | CKSRYB102K50 |
| C | 170 | CCSRCH100D50 |
| C | 201 | CCSRCH471J50 |
| C | 202 | CCSRCH100D50 |
| C | 203 | CKSRYB332K50 |
| C | 204 | CKSQYB473K16 |
| C | 205 | CKSQYB473K16 |
| C | 206 | CKSQYB104K16 |
| C | 207 | CCSRCH560J50 |
| C | 209 | CKSQYB104K16 |
| C | 211 | CCSRCH101J50 |
| C | 212 | CEJA470M6R3 |
| C | 213 | CKSRYB103K25 |
| C | 216 | CCSRCH101J50 |
| C | 217 | CEJA1R5M50 |
| C | 219 | CCSRCH471J50 |
| C | 220 | CKSRYB103K25 |
| C | 230 | CKSRYB103K25 |
| C | 231 | CCSRCH330J50 |
| C | 232 | CCSRCH150J50 |
| C | 233 | CKSQYB104K16 |
| C | 234 | CEJA330M10 |
| C | 235 | CKSRYB332K50 |
| C | 236 | CKSQYB473K16 |
| C | 237 | CCSRCH120J50 |
| C | 239 | CKSRYB472K50 |
| C | 240 | CEJAR47M50 |
| C | 241 | CKSQYB104K16 |
| C | 242 | CEJAR47M50 |
| C | 243 | CEJAR33M50 |
| C | 244 | CKSQYB473K16 |
| C | 245 | CKSRYB123K25 |
| C | 246 | CKSQYB473K16 |
| C | 250 | CCSRCH471J50 |

| =====Circuit Symbol and No. | === | Part Name | Part No. |
|---|---|---|---|
| **E** Unit Number : | | | |
| Unit Name : | | Mute PCB | |
| SW | 2 | Mute Switch | 1-0138-7087 |
| **C** Unit Number : | | | |
| Unit Name : | | SW PCB | |
| SW | 3 | Slide Switch | 1-0036-7007 |
| Miscellaneous Parts List | | | |
| HD | 1 | Head | 10036-7016-1 |
| M | 1 | Motor Assy | X-0036-6075 |
| SW | 1 | Power Switch | 1-0036-7034 |

# 6. ADJUSTMENT

## ● Connection Diagram

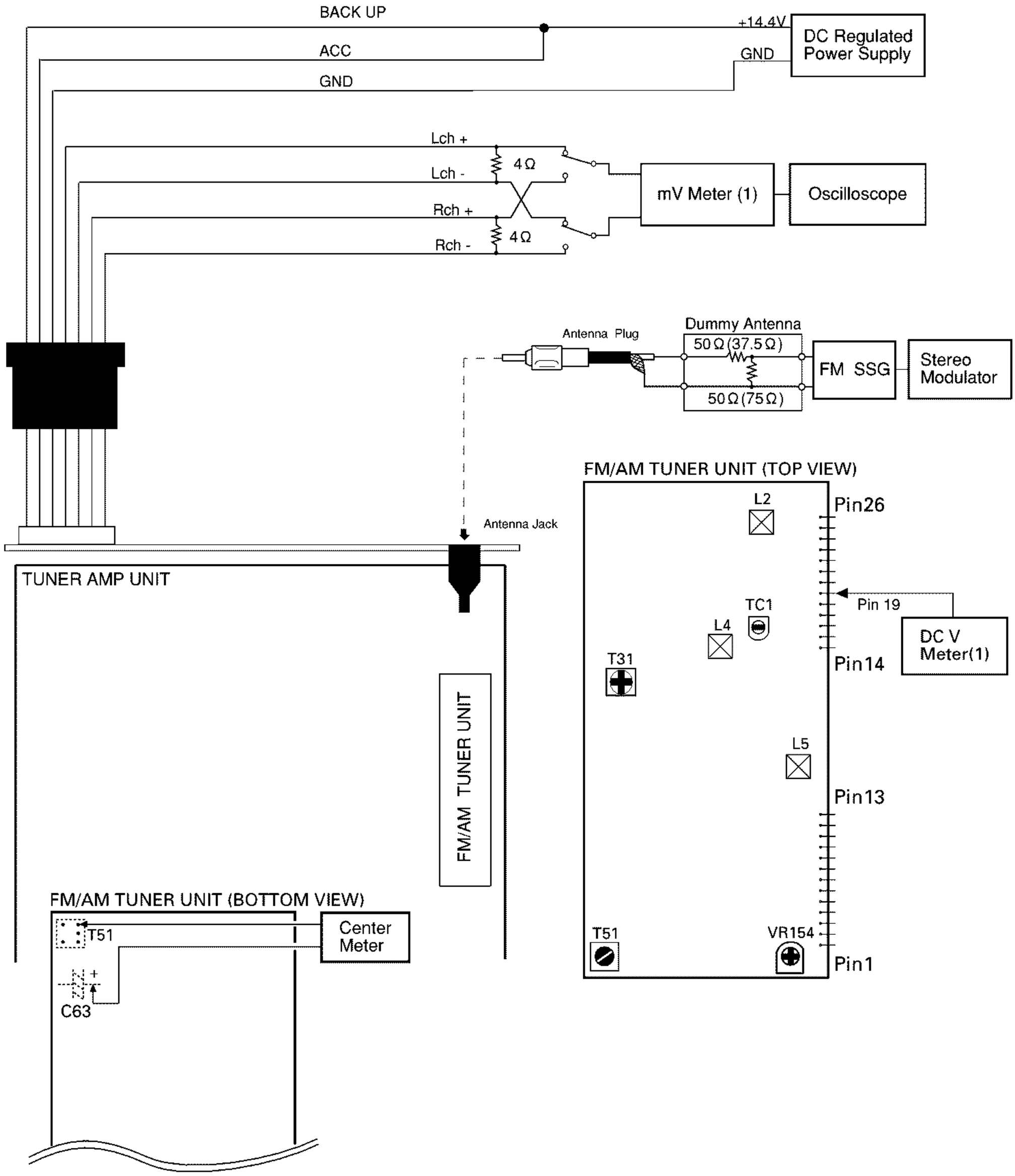



Fig. 16

## FM ADJUSTMENT

Modulation M:MONO MOD., 400Hz 30%(22.5kHz Dev.) or 400Hz 100%(75kHz Dev.)
S:STEREO MOD., 1kHz, L or R=30%(20.25kHz+7.5kHz Dev.)

NOTE:Before proceeding to further adjustments after switching power ON, let the tuner run for ten minutes to allow the circuits to stabilize.

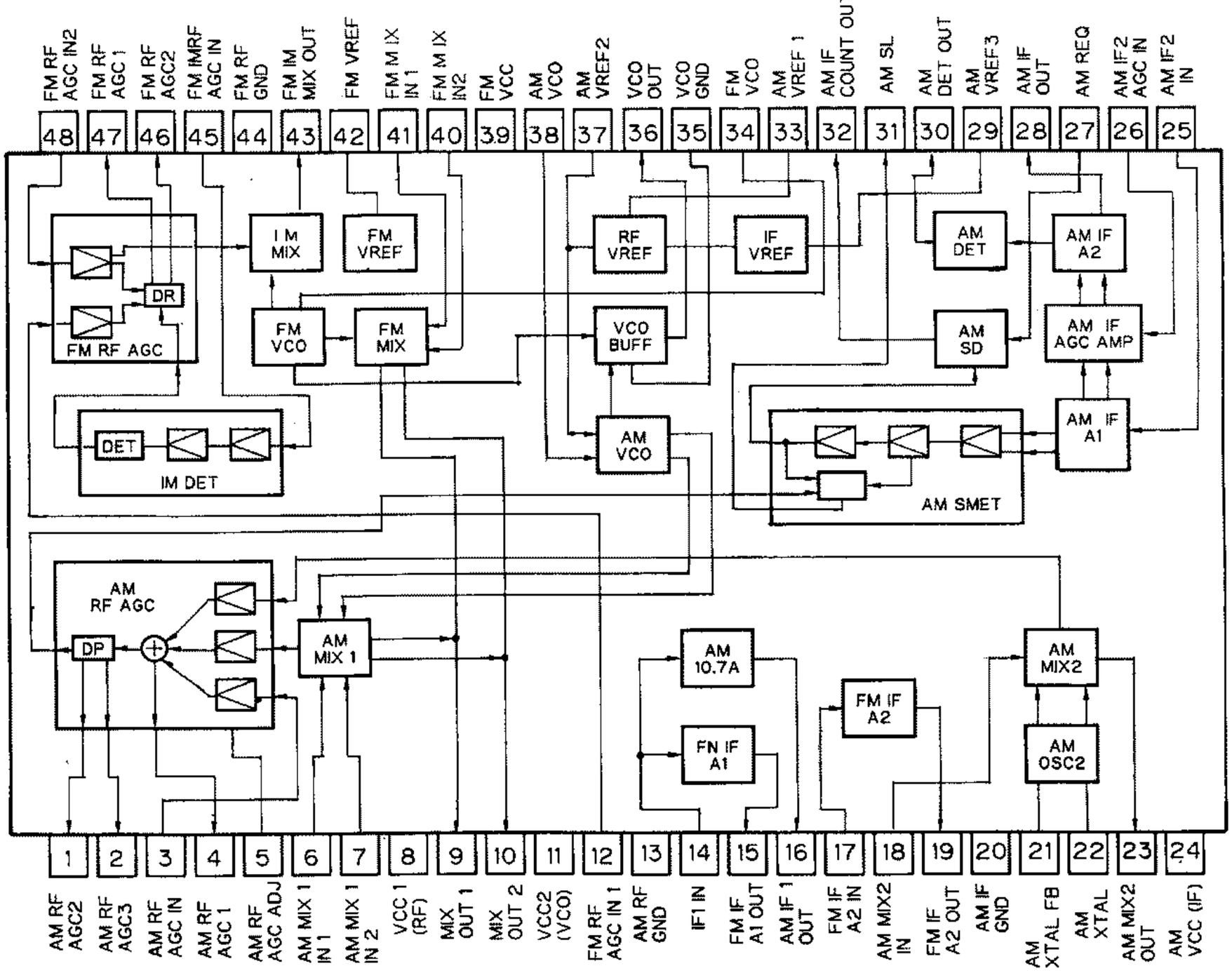
| | No. | FM SSG | | Displayed | Adjustment | Adjustment Method |
|---|---|---|---|---|---|---|
| | | Frequency(MHz) | Level(dBf) | Frequency(MHz) | Point | (Switch Position) |
| TUN Volt | 1 | ••••• | ••••• | 108.0 | L5 | DC V Meter(1) : 6V |
| IF | 2 | 98.1 M | 60 | 98.1 | T51 | Center Meter : 0 |
| ANT Coil | 3 | 98.1 M | 5 | 98.1 | L2 | mV Meter(1) : Maximum |
| RF Coil | 4 | 98.1 M | 5 | 98.1 | L4 | mV Meter(1) : Maximum |
| Image | 5 | 129.3 M | 60—80 | 107.9 | TC1 | mV Meter(1) : Minimum |
| IFT | 6 | 98.1 M | 5 | 98.1 | T31 | mV Meter(1) : Maximum (STEREO MODE) |
| ARC | 7 | 98.1 S | 40 | 98.1 | VR154 | mV Meter(1) : Separation 5dB (STEREO MODE) |

# 7. GENERAL INFORMATION

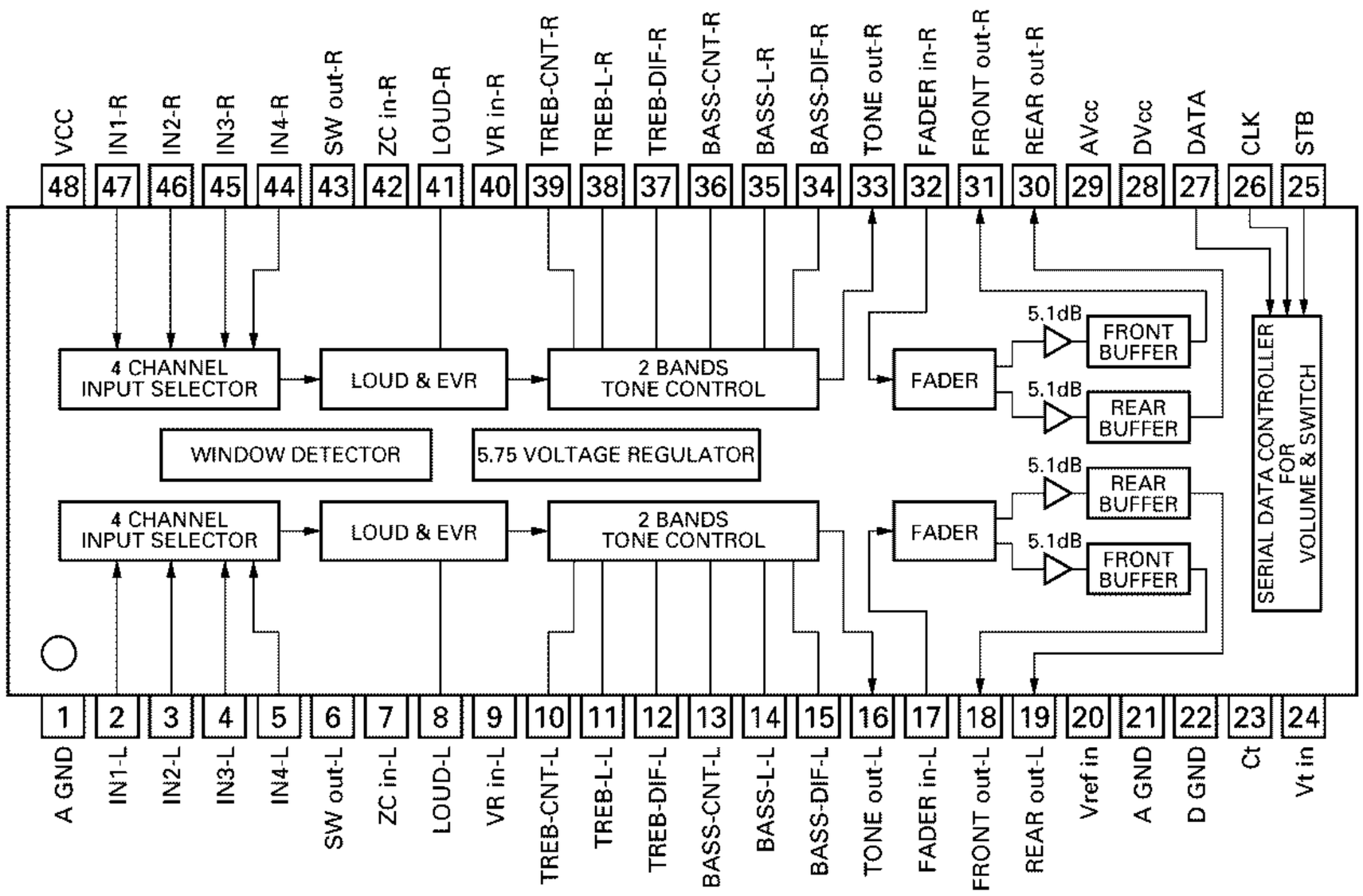
## 7.1 PARTS

### 7.1.1 IC

PA4023B



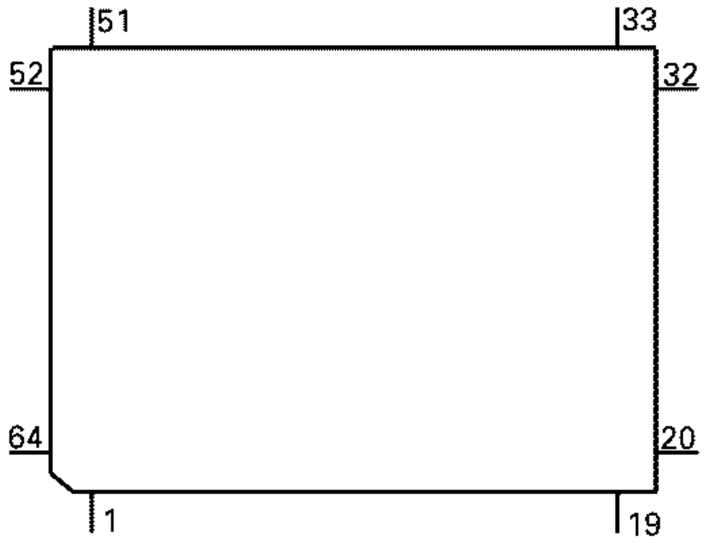

SN761027DL



## ● Pin Functions (PD4875A)

| Pin No. | Pin Name | I/O | Format | Function and Operation |
|---|---|---|---|---|
| 1 | $\overline{\text{MCMUTE}}$ | I | | Cassette mechanism mute input |
| 2 | $\overline{\text{TAPLD}}$ | I | | Tape loading input |
| 3 | EO | O | C | Error output |
| 4 | VDD1 | | | Power supply |
| 5 | GND | | | GND |
| 6 | VCOIN | I | | AM/FM VCO input |
| 7 | ASENS | I | | ACC power sense input |
| 8 | VDD2 | | | Power supply |
| 9 | LCK | I/O | C | Serial clock output for LCD driver |
| 10 | LDT | O | C | Data output for LCD driver |
| 11 | LDI | I | | Key/LCD driver data input |
| 12 | FMSD | I | | FM SD input |
| 13 | AMIF | I | | AM IF signal input |
| 14 | SL | I | | Signal level input |
| 15 | $\overline{\text{ST}}$ | I | | FM stereo input |
| 16,17 | NC | | | Not used |
| 18 | $\overline{\text{SWVDD}}$ | O | C | Grille power supply control output |
| 19 | NC | | | Not used |
| 20 | VST | O | C | Strobe pulse output for electronic volume |
| 21 | VCK | O | C | Clock output for electronic volume |
| 22 | VDT | O | C | Data output for electronic volume |
| 23 | NC | | | Not used |
| 24 | XO | O | | Crystal oscillator connection pin |
| 25 | XI | I | | Crystal oscillator connection pin |
| 26 | GND | | | GND |
| 27–30 | NC | | | Not used |
| 31 | TESTIN | I | | Test program mode input |
| 32 | $\overline{\text{DSENS}}$ | I | | Grille detach sense input |
| 33,34 | GND | | | GND |
| 35–38 | NC | | | Not used |
| 39 | $\overline{\text{MUTE}}$ | O | C | System mute output |
| 40 | DMINH | O | | Mechanism mute cancel output |
| 41,42 | NC | | | Not used |
| 43 | SYSPW | O | C | System power supply control output |
| 44–48 | NC | | | Not used |
| 49 | MS | | | Not used |
| 50 | MECPW | O | C | Cassette mechanism power output |
| 51 | AM | O | C | AM power control output |
| 52 | LOCL | O | C | LOC “L“ output |
| 53 | LOCH | O | C | LOC “H” output |
| 54 | FM | O | C | FM power control output |
| 55 | $\overline{\text{SEEK}}$ | O | C | Seek output |
| 56 | NC | | | Not used |
| 57 | LW | O | C | LW output |
| 58 | GND | | | GND |
| 59,60 | NC | | | Not used |
| 61 | DM1 | I | | Model,function input |
| 62 | DM0 | I | | Model,function input |
| 63 | NOR/$\overline{\text{REV}}$ | I | | Tape running input |
| 64 | GND | | | GND |

*PD4875A



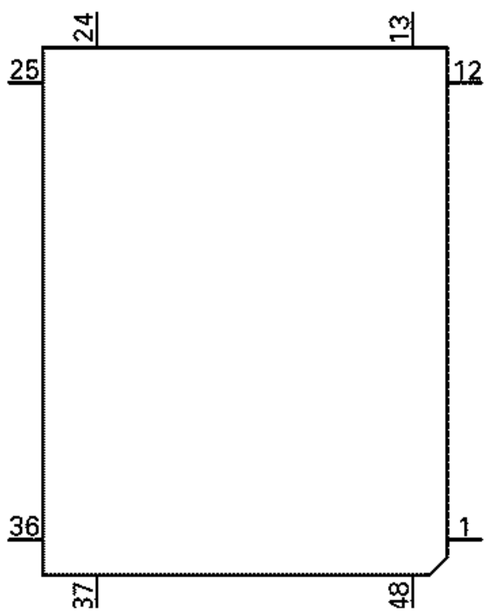

IC's marked by* are MOS type.
Be careful in handling them because they are very liable to be damaged by electrostatic induction.

| Format | Meaning |
|---|---|
| C | C MOS |

## ● Pin Functions(PDC045A)

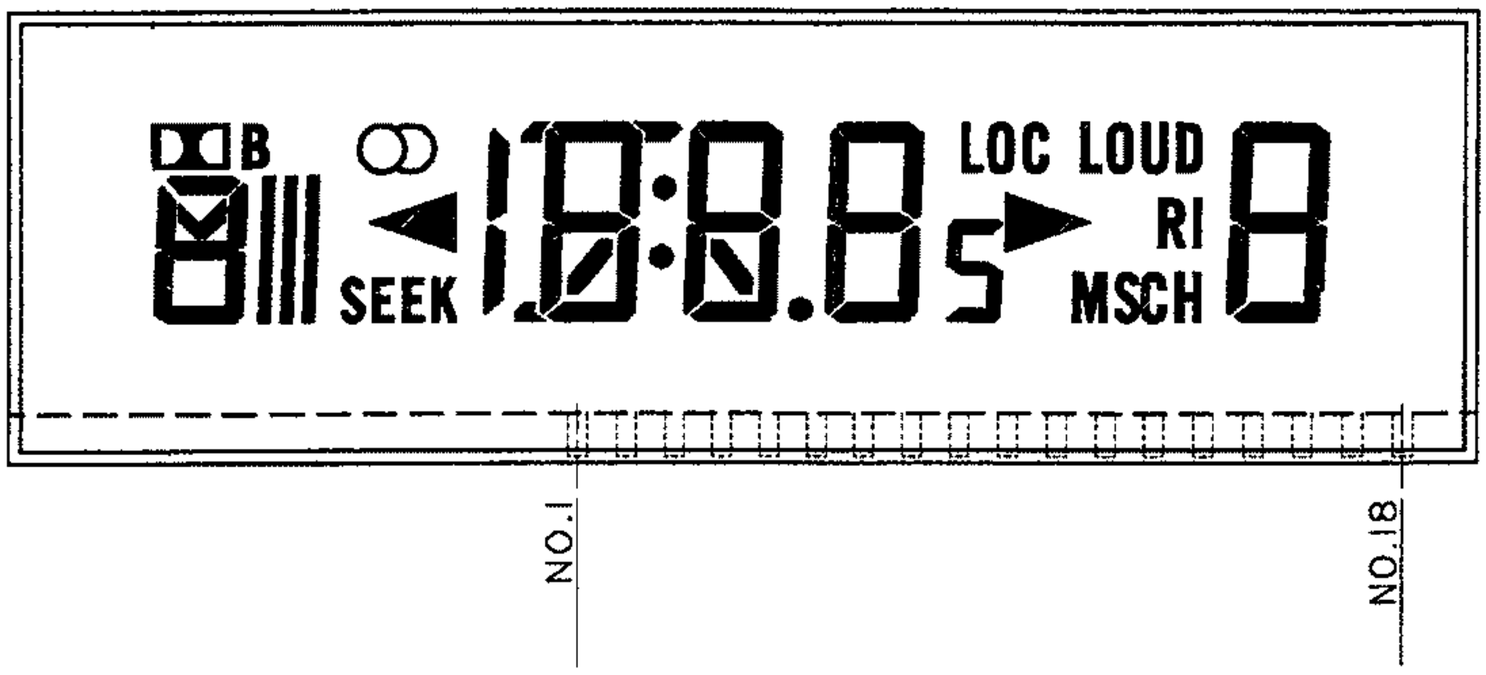
| Pin No. | Pin Name | I/O | Function and Operation |
|---|---|---|---|
| 1–4 | NC | | Not used |
| 5–8 | KS4-1 | O | Key strobe output |
| 9–12 | KD4-1 | I | Key data input |
| 13 | SI | I | Display data input |
| 14 | SO | O | Key data output |
| 15 | SCK | I/O | Clock input terminal for serial data input and output |
| 16 | REMIN | I | Remote control reception |
| 17 | RES | I | Reset input |
| 18 | TEST | I | Test input |
| 19 | OSC-IN | I | System clock input |
| 20 | OSC-OUT | O | System clock output |
| 21 | GND | | GND |
| 22,23 | VDD2,1 | | LCD power supply |
| 24 | VDD | | Power supply |
| 25–28 | COM1-4 | O | LCD common signal |
| 29–42 | SEG1-14 | O | LCD segment signal |
| 43–48 | NC | | Not used |

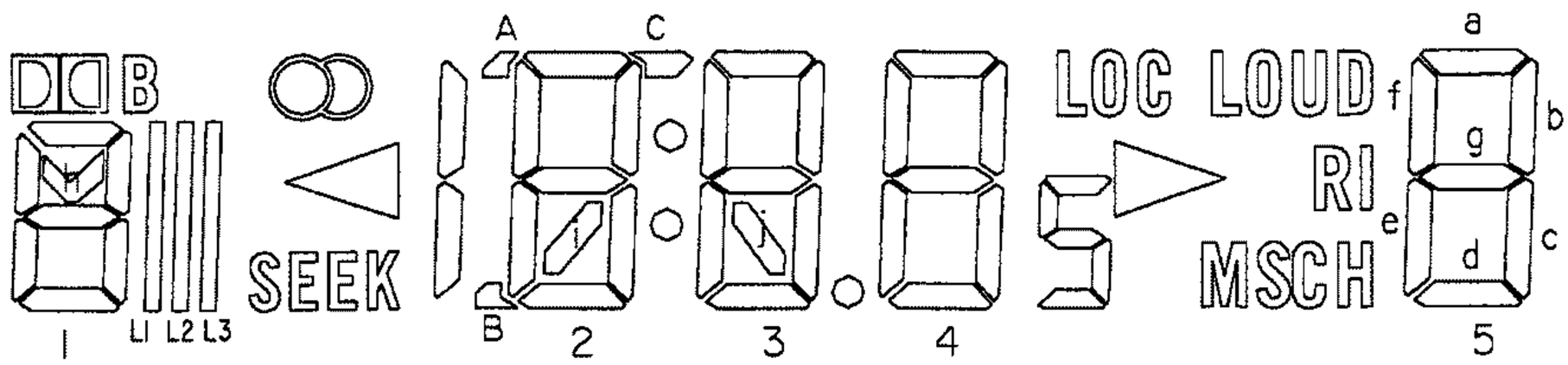
*PDC045A



## 7.1.2 DISPLAY

● CAW1462




| NO. | COM.1 | COM.2 | COM.3 | COM.4 |
|---|---|---|---|---|
| 1 | | | | COM.4 |
| 2 | | | COM.3 | |
| 3 | | COM.2 | | |
| 4 | COM.1 | | | |
| 5 | 1f | 1h | 1a | ▣B |
| 6 | 1e | 1g | 1b | ◎ |
| 7 | 1d | 1c | L1 | L2,L3 |
| 8 | SEEK | ◁ | ∫ | A,B |
| 9 | 2i | 2e | 2f | 2a |
| 10 | 2d | 2c | 2g | 2b |
| 11 | 3j | 3e | 3f | 3a |
| 12 | 3d | 3c | 3g | 3b |
| 13 | ∘ | 4e | 4f | 4a |
| 14 | 4d | 4c | 4g | 4b |
| 15 | ▷ | 5 | ∘ | C |
| 16 | MS | RI | LOUD | LOC |
| 17 | CH | 5e | 5f | 5a |
| 18 | 5d | 5c | 5g | 5b |

Fig. 17

## 7.2 DISASSEMBLY

### ● Removing the Case(not shown)

1. Insert and turn a screwdriver to remove the case.

### ● Removing the Mechanism Assy (not shown)

1. Remove the four screws.
2. Disconnect the connector, and then removing the Mechanism Assy.

### ● Removing the Detach Grille Assy(Fig.18)

1. Disengage the stopper at two locations indicated by arrows.
2. Remove the Detach Grille Assy.

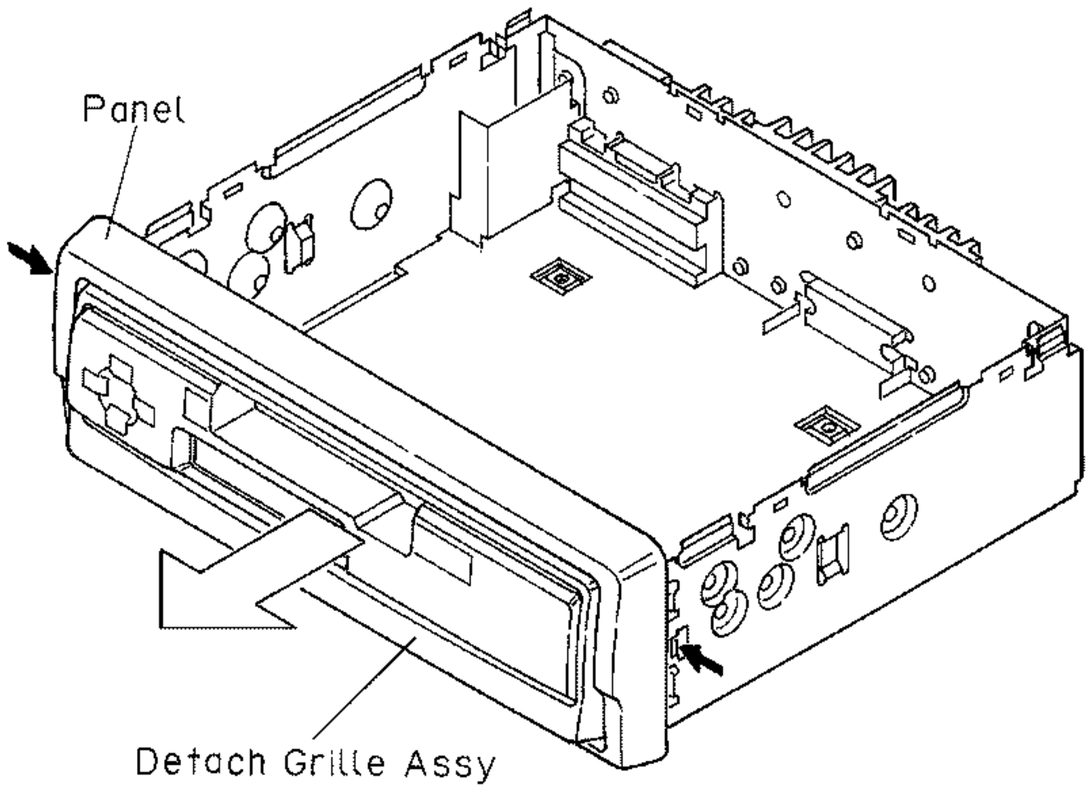



Fig. 18

### ● Removing the Tuner Amp Unit(Fig.19)

1. Removing the three screws A.
2. Unbend the tabs at four locations indicated by arrows until straight.
3. Remove the Tuner Amp Unit.

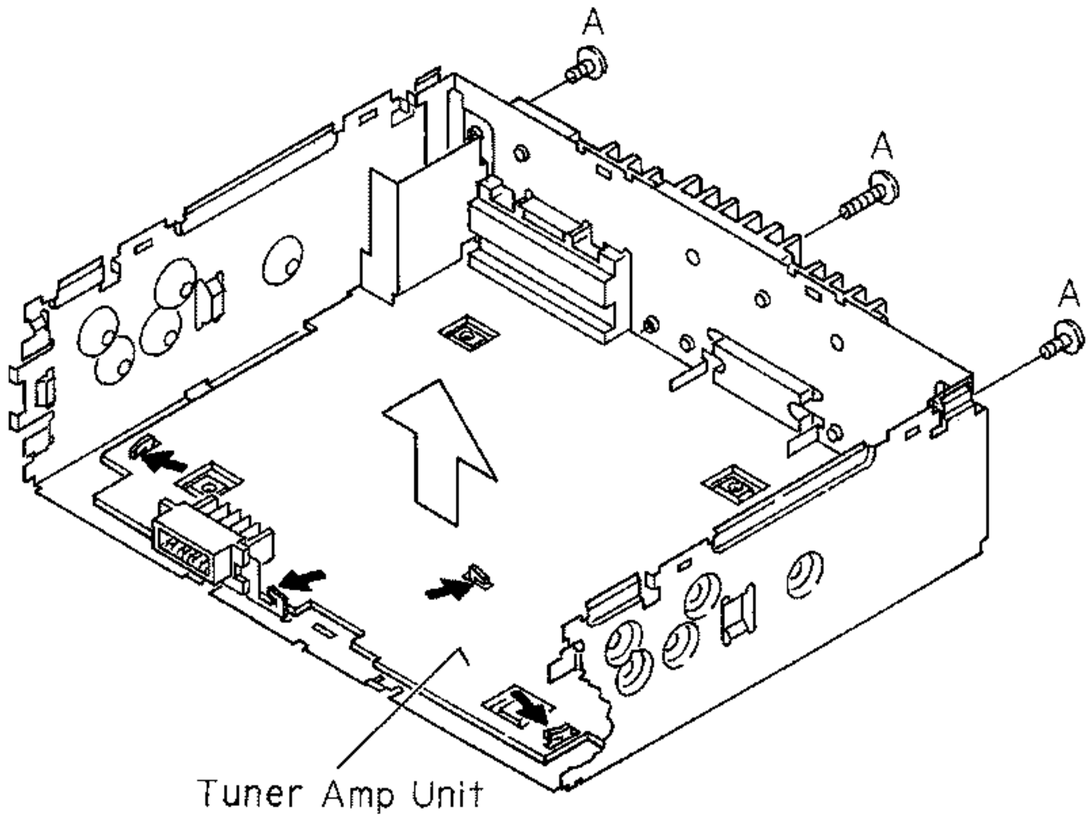



Fig. 19

# 7.3 BLOCK DIAGRAM

## ● KEH-1700/X1M/EW

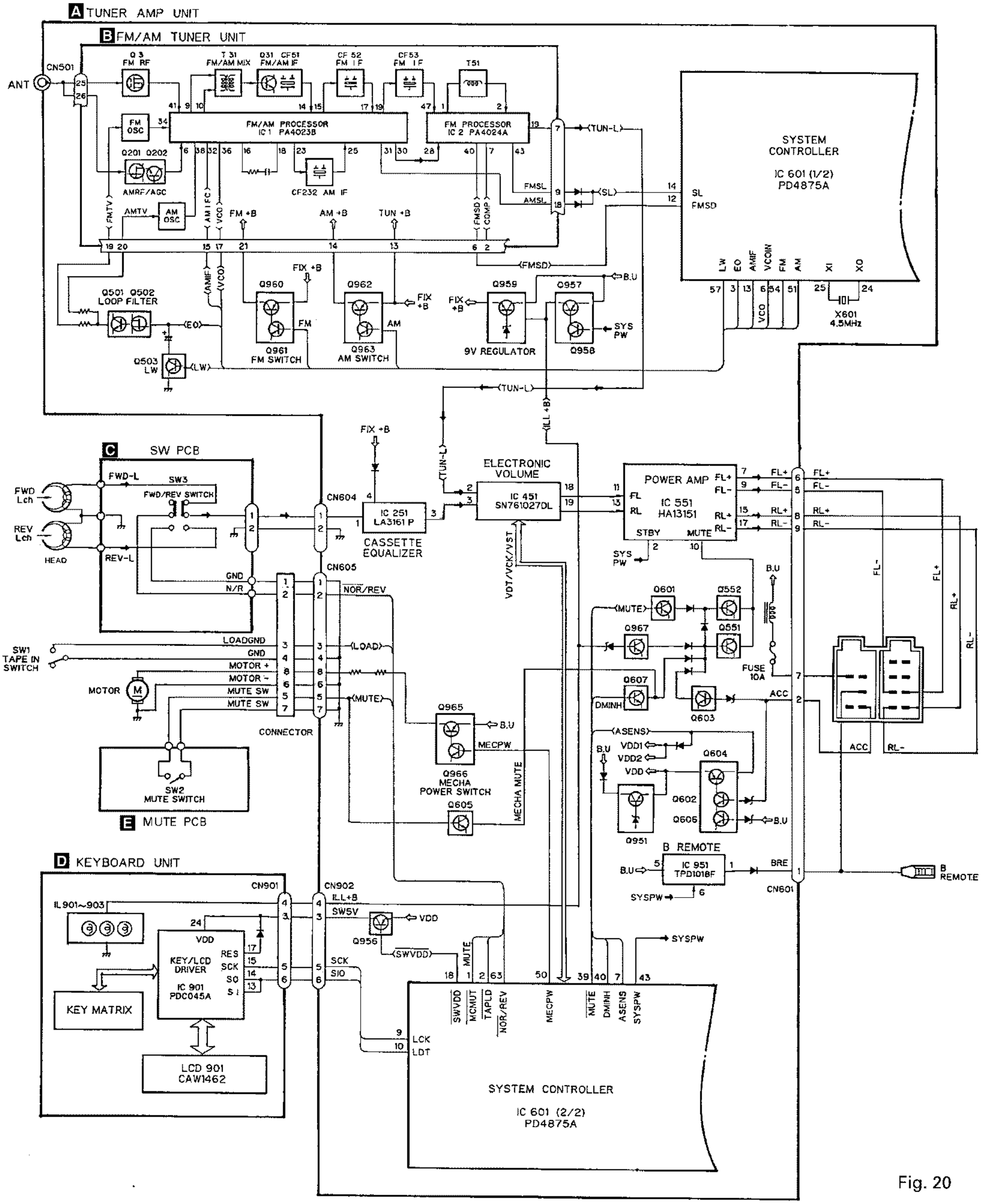



Fig. 20

# 8. OPERATIONS AND SPECIFICATIONS

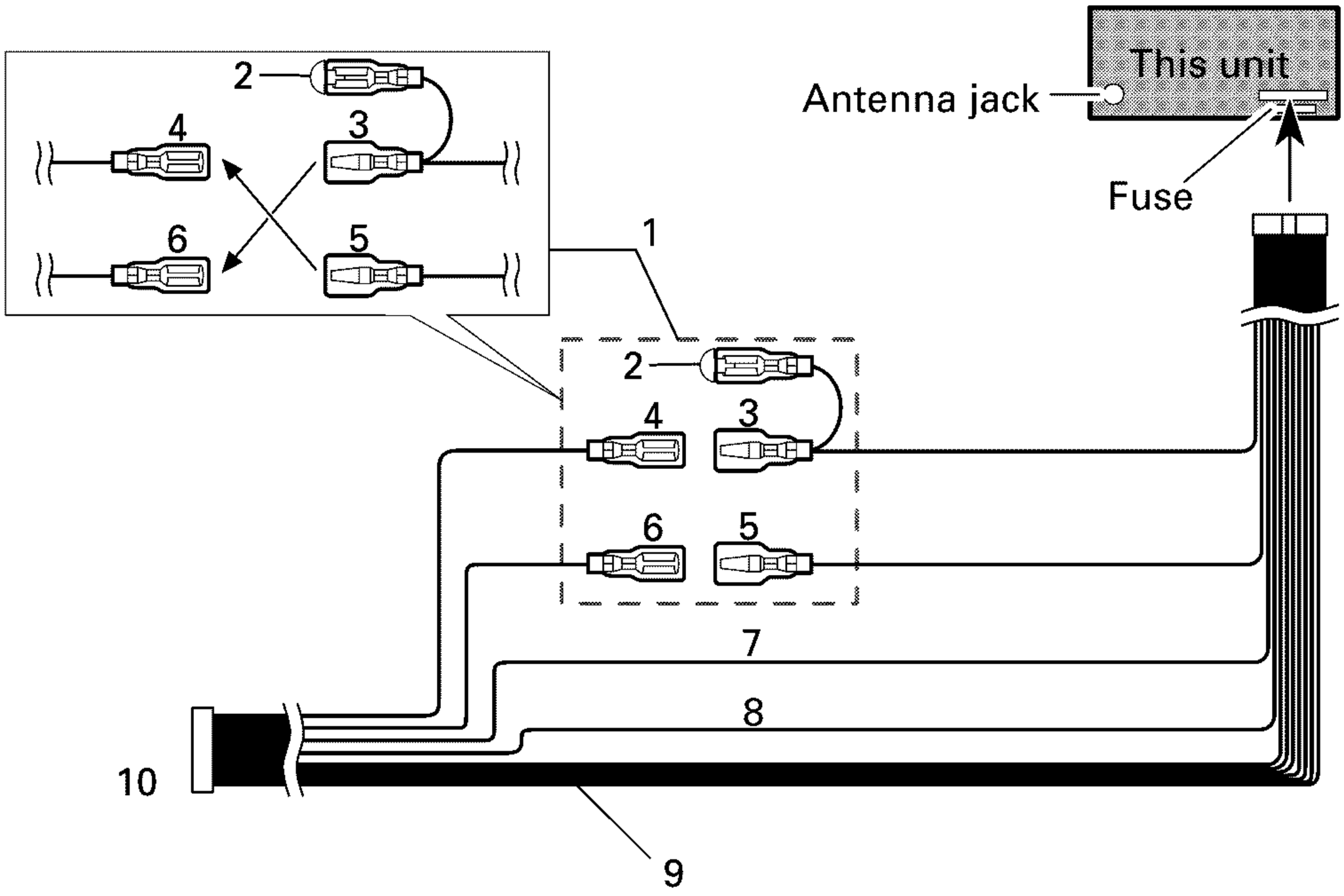
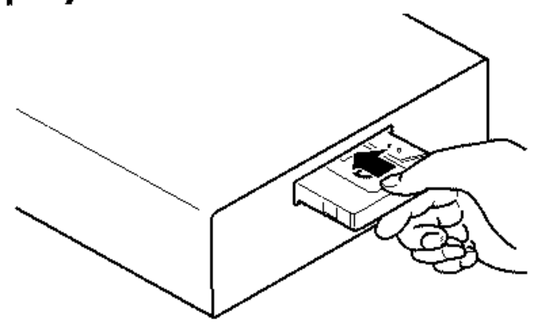



Fig. 21

# Power ON/OFF

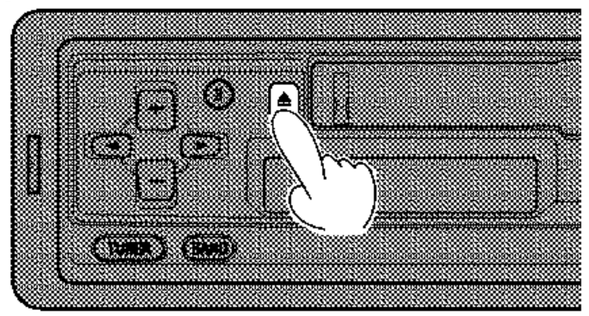
## Tape

### To play



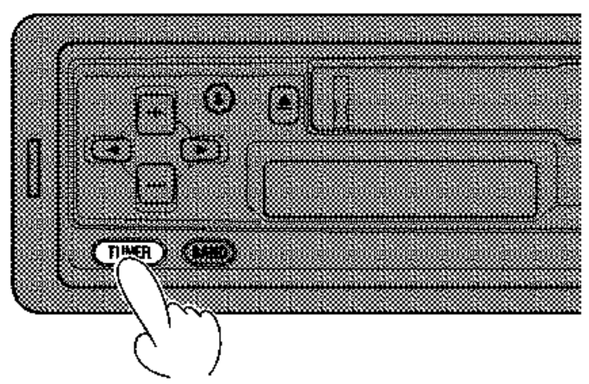
**Insert a cassette tape through the cassette door, the power comes on and the tape starts to play automatically.**

### Eject



**Press the [⏏] button.**

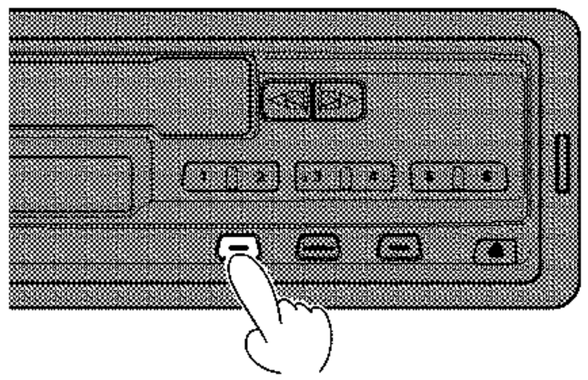
## Radio



**Press the [TUNER] button to switch the tuner ON/OFF.**
- You cannot switch to "TUNER" when a tape is loaded.

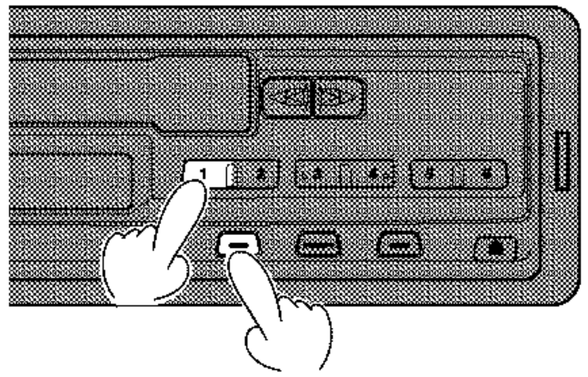
# Using the Clock

## Displaying the Time



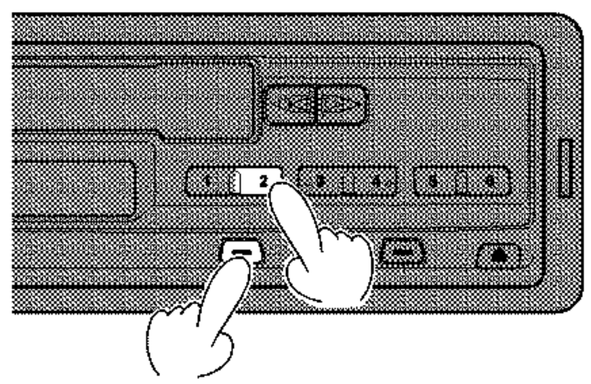
**Press the [CLOCK] button to turn the clock ON/OFF.**
- The clock cannot be displayed when the POWER is OFF.
- When you perform another operation, the clock temporarily disapears from the display. The clock display is restored approximately 25 seconds after the operation.

### To adjust the hour



**Hold down the [CLOCK] button and press the [1] button while the clock is displayed.**
- You can adjust the hour successively by pressing the [1] buttons while holding down the [CLOCK] button.

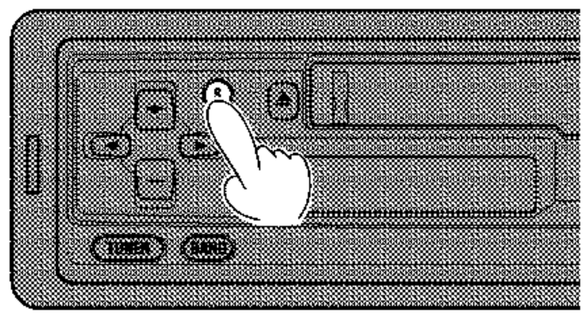
### To adjust the minute



**Hold down the [CLOCK] button and press the [2] button while the clock is displayed.**
- You can adjust the minute successively by pressing the [2] buttons while holding down the [CLOCK] button.
- The seconds start at "0" When you release the [CLOCK] button.

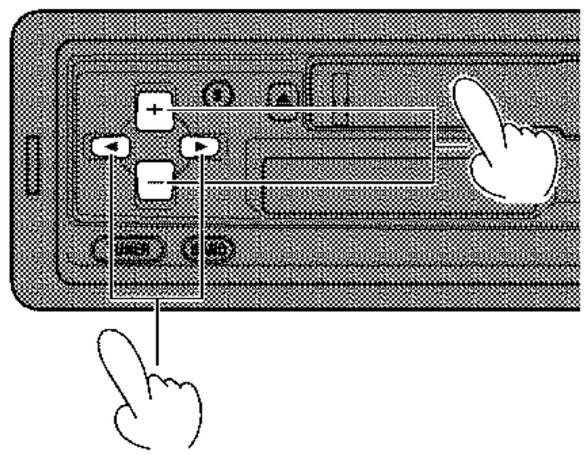
# Adjusting Volume and Tone

## Mode Selection



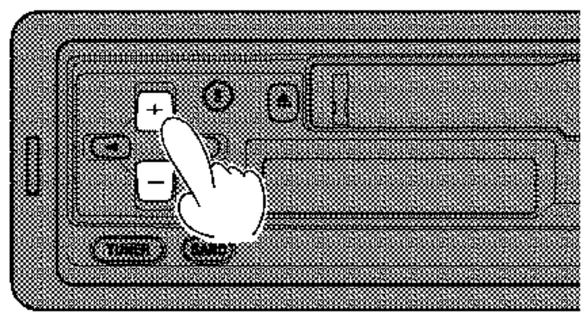
**Each press of the [S] button changes the mode as follows:**
**Fader adjustment (F:) — Tone adjustment (T:) — Volume adjustment (V:)**
- Fader, Balance, Treble and Bass settings stop temporarily at the center position.
- If no operations are performed within 8 seconds, adjustment modes are cancelled. Make adjustments within 8 seconds.

## Fader/Balance



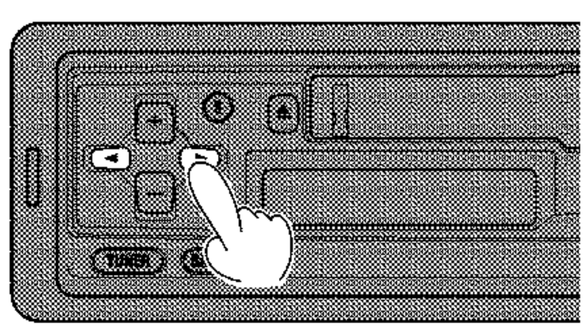
Press the [◄] or [►] button when in the Fader mode, and the Balance mode "B:" is indicated in the display. Press the [+] or [–] button when in the Balance mode, and the display changes to "F:", indicating that you have switched to the Fader mode.

### Fader



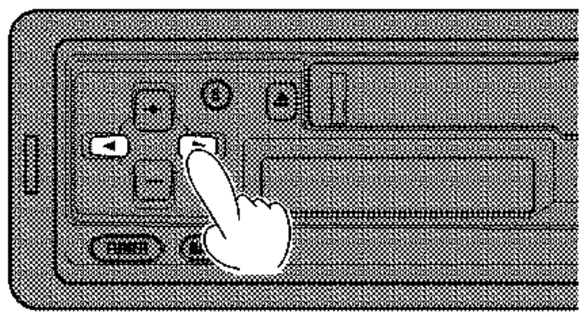
**[+]: Shifts the sound toward the front speakers.**
**[–]: Shifts the sound toward the rear speakers.**
(Display shows "F:F9" ~ "F:R9".)
- Please set to "F: 0" when using a 2 speaker system.

### Balance



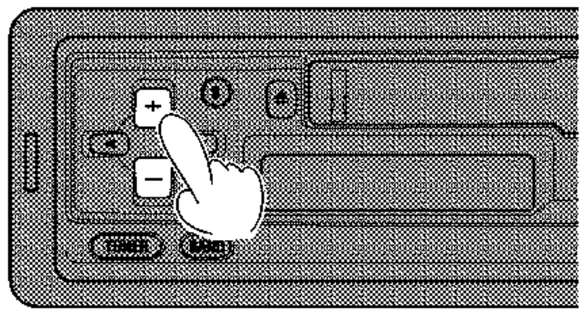
**[►]: Shifts the sound toward the right speakers.**
**[◄]: Shifts the sound toward the left speakers.**
(Display shows "B:L9" ~ "B:R9".)

## Bass/Treble



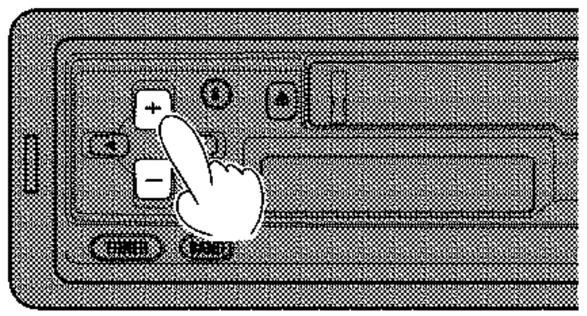
Press the [◄] button when in the Treble mode, and the Bass mode "B:" is indicated in the display. Press the [►] button when in the Bass mode, and the display changes to "T:" indicating that you have switched to the Treble mode.

## Adjusting Bass/Treble



**[+]: Boosts**
**[–]: Attenuates**
(When in the Treble mode, the display shows "T:–6" ~ "T: 6". When in the Bass mode, it shows "B:–6" ~ "B: 6".)

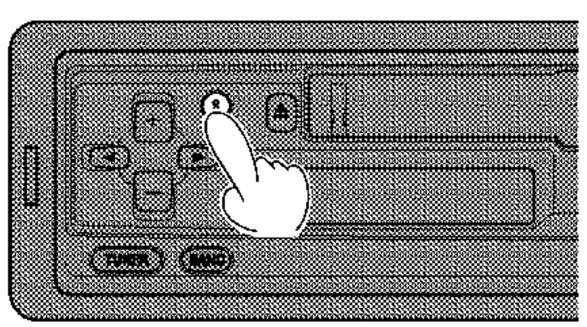
## Volume



**Pressing the [+] button increases the volume, while the [–] button decreases it.**
(Display shows "V: 0" ~ "V: 31".)
- When driving your vehicle, be sure to keep the volume of the unit set low enough to allow you to hear sounds coming from outside.

## Loudness

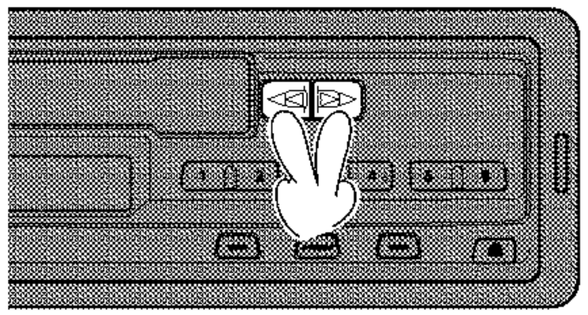
This function enhances both the high and low ranges of sound to give even more power to output at low volume.



**Press the [S] button for 2 seconds to turn Loudness ON/OFF.**
"LOUD" appears in the display when the Loudness function is turned ON.
"LOUD" goes out when the Loudness function is turned OFF.

# Using the Tape Deck

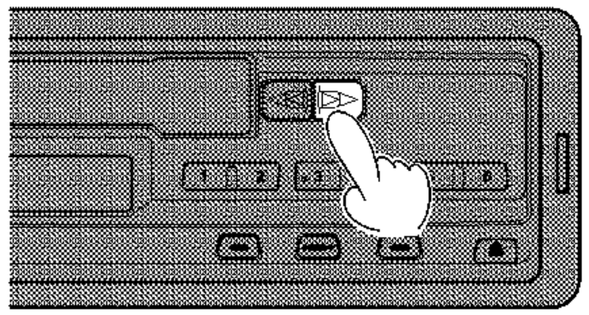
## To Change Sides



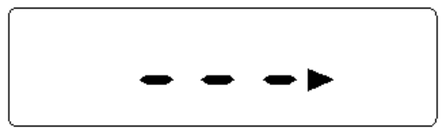
**Press the [◄◄] and [►►] buttons at the same time.**

## Fast Forward/Rewind

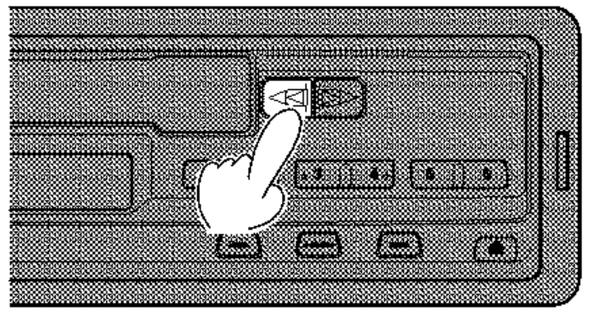
### Fast forward



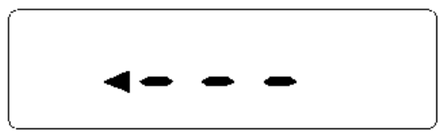
**Press the button for the same direction as the tape play indicator.**



### Rewind



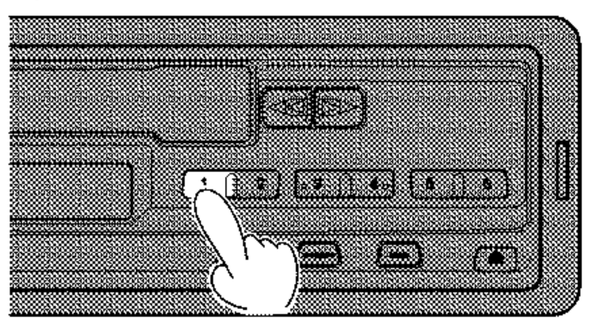
**Press the button for the opposite direction as the tape play indicator.**



- To release fast forward/rewind, lightly press the [◄◄] or [►►] button located on the opposite side of the one you pressed to fast forward or rewind.
- " ◄ ▬ ▬ ▬► " flashes when the tape is fast forwarding or rewinding.

## Radio Intercept

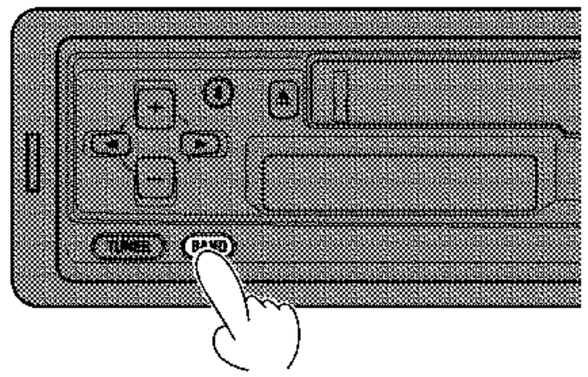
This function lets you listen to the radio while playing, fast forwarding, or rewinding a tape.



**Press the [1] button to turn radio intercept ON/OFF.**
"RI" appears in the display when the radio intercept function is turned ON.
"RI" goes out when the radio intercept function is turned OFF.

# Using the Radio

## Selecting a Band

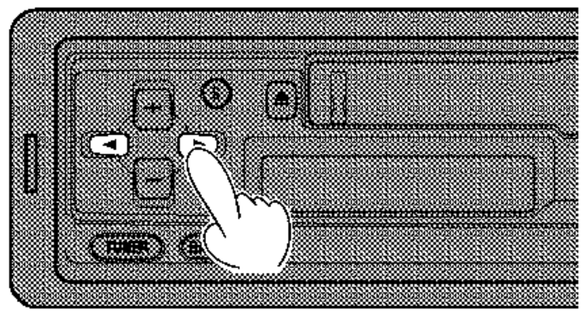


**Press the [BAND] button to select a band.**

►F Ⅰ→F Ⅱ→F Ⅲ→M/L
(FM1) (FM2) (FM3) (MW/LW)

Use the [◄] and [►] buttons to switch between MW and LW.
MW : 531 — 1,602 kHz
LW : 153 — 281 kHz

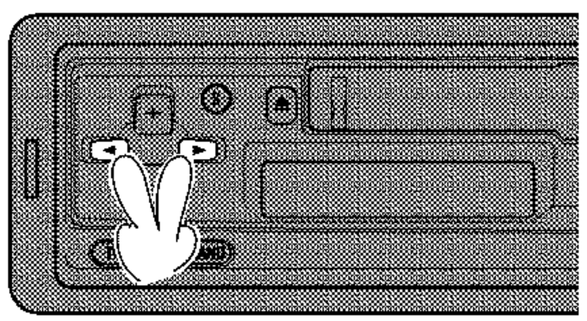
## Seek Tuning



**[◄]: Automatically selects a lower frequency station.**
**[►]: Automatically selects a higher frequency station.**
("SEEK" lights in the display.)

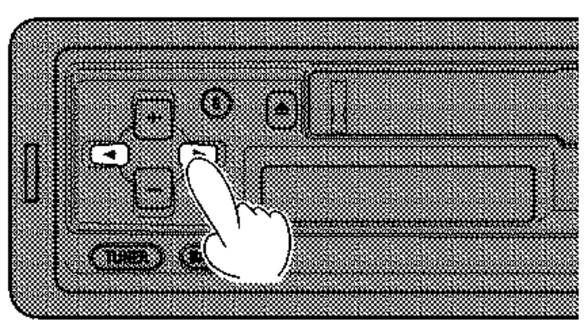
## Manual Tuning

1.



**Press both [◄] and [►] buttons at same time.**
("SEEK" goes out from the display.)
- Each time you repeat this operation, "SEEK" either lights or goes out.

2.



**[◄]: Use to select lower frequencies.**
**[►]: Use to select higher frequencies.**
Continue pressing the button to move up or down continuously through frequencies.
- Tuning moves up or down in 50 kHz steps for FM, 9 kHz steps for MW and 1 kHz steps for LW.

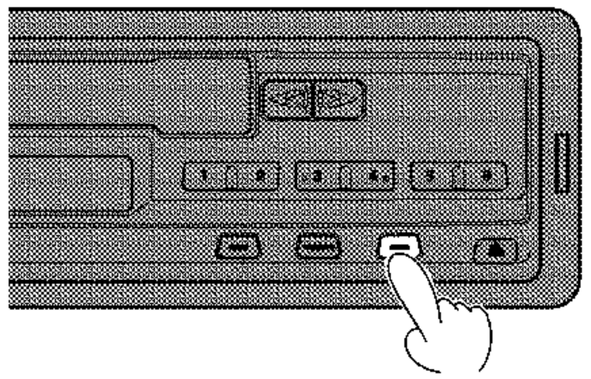
## Adjusting Seek Sensitivity

The seek tuning function of this tuner lets you select between a local setting for reception of strong stations only, and a DX (distant) setting for reception of weaker stations.

The local setting also has 4 seek tuning sensitivity levels for FM and 2 levels for MW/LW to match local conditions

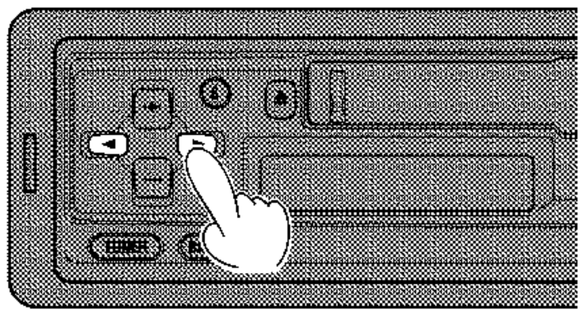
### Changing the local seek sensitivity

1.



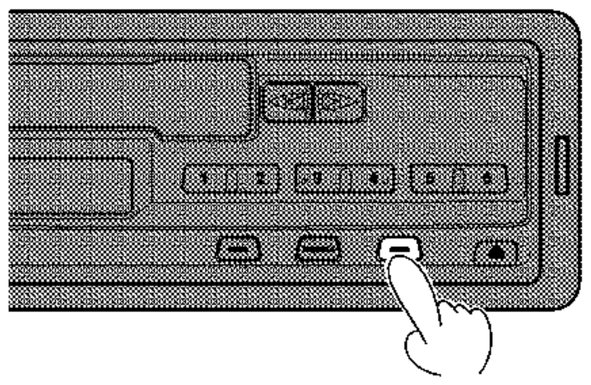
**Select the desired band, and press the [LOC] button for more than 2 seconds.**
(The local seek level is indicated in the display for about 5 seconds.)

2.



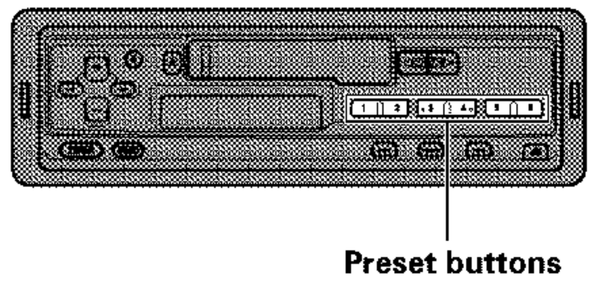
**[►]: Raises the sensitivity level.**
**[◄]: Lowers the sensitivity level.**
FM :L-1 ⇄ L-2 ⇄ L-3 ⇄ L-4
MW/LW:L-1 ⇄ L-2
The L-4 setting allows reception of only the strongest stations, while lower settings let you receive progressively weaker stations. Adjust the sensitivity while the local seek indication is displayed (5 seconds).

### Switching between local and DX



**Press the [LOC] button.**
Each time you press the button, you switch between local and DX.
Local position:"LOC" is displayed.
DX position :"LOC" is not displayed.

## Preset Memory



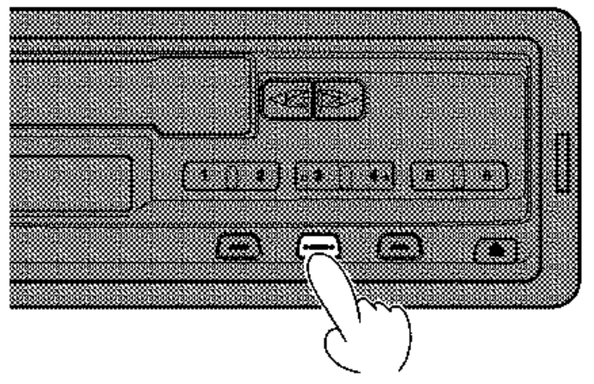

**Tune into the station you want to memorize, and press the desired preset button for 2 seconds or more.**
FM :18 stations can be memorized (6 stations each for FM1/FM2/FM3.)
MW/LW :6 stations can be memorized.

To recall a memorized station, briefly press the preset button for the station you desire. (The selected preset number lights in the display.)

## BSM (Best Stations Memory)

This function automatically locates stronger stations and automatically assigns their frequencies to preset buttons [1 – 6], in order of strength.

It comes in handy when trying to find local stations while driving.



**Select the desired band, and press the [BSM] button for 2 seconds or more.**
(" ▬ ▬ ▬ " flashes in the display until BSM operation is completed.)
- If there are fewer than 6 strong stations in the area, some of the preset buttons will not be assigned frequencies, so they will retain any frequencies assigned to them previously.

# Specifications

**General**
Power source ..... 14.4 V DC (10.8 — 15.1 V allowable)
Grounding system ..... Negative type
Max. current consumption ..... 6.0 A
Dimensions (chassis) ..... 178 (W) × 50 (H) × 150 (D) mm
(front face) ..... 188 (W) × 58 (H) × 19 (D) mm
Weight ..... 1.4 kg

**Amplifier**
Maximum power output ..... 22 W × 4
Continuous power output ..... 14 W × 4 (DIN45324, +B = 14.4 V)
Load impedance ..... 4 Ω (4 — 8 Ω allowable)
Tone controls (bass) ..... ±12 dB (100 Hz)
(treble) ..... ±12 dB (10 kHz)
Loudness contour ..... +10 dB (100 Hz), +7 dB (10 kHz) (Volume: –30 dB)

**Tape player**
Tape ..... Compact cassette tape (C-30 — C-90)
Tape speed ..... 4.76 cm/sec.(+0.14 cm/sec.,-0.05 cm/sec.)
Fast forward/rewind time ..... Approx. 160 sec. for C-60
Wow & flutter ..... 0.13 % (WRMS)
Frequency response ..... 40 — 14,000 Hz (±3 dB)
Stereo separation ..... 45 dB
Signal-to-noise ratio ..... 52 dB (IEC-A network)

**FM tuner**
Frequency range ..... 87.5 — 108 MHz
Usable sensitivity ..... 11 dBf (1.0 µV/75 Ω, mono, S/N: 30 dB)
50 dB quieting sensitivity ..... 16 dBf (1.7 µV/75 Ω, mono)
Signal-to-noise ratio ..... 70 dB (IEC-A network)
Distortion ..... 0.3 % (at 65 dBf, 1 kHz, stereo)
Frequency response ..... 30 — 15,000 Hz (±3 dB)
Stereo separation ..... 40 dB (at 65 dBf, 1 kHz)

**MW tuner**
Frequency range ..... 531 — 1,602 kHz
Usable sensitivity ..... 18 µV (S/N: 20 dB)
Selectivity ..... 50 dB (±9 kHz)

**LW tuner**
Frequency range ..... 153 — 281 kHz
Usable sensitivity ..... 30 µV (S/N: 20 dB)
Selectivity ..... 50 dB (±9 kHz)

**Note:**
Specifications and design are subject to possible modification without notice due to improvements.